

Government Responses to Contractor Questions GEMS Program

Document	Reference	Gov't ID Num	Question	Govt Answer
Sect M	General	10	<p>Re Sect M: The Government is releasing this draft version of the GEMS RFP Section M and the Draft TRD</p> <p>What is the plan and schedule for updating these documents and the GEMS ORD?</p> <p>Will a separate SOO be used for Phase I and if so when will it be available?</p> <p>Have the requirements in the TRD been balanced against a user CONOPS and is that CONOPS available to industry?</p>	<p>The most recent RFP Section M is posted to HERBB. The TRD is being updated and is targeted for released on 2/5/04.</p> <p>Version 8.4 of the ORD was distributed during the week of 1/20-23/04.</p> <p>The SOO is being updated and is targeted for released on 2/5/04.</p> <p>The Concept of Operations is available in section 1.4 of the ORD.</p>
Sect M	General	230	<p>All offerors will be asked to use that information as the basis of their equipment installation/removal schedule and costs for the fixed site GEMS.</p> <p>In previous discussions with the customer, funding for installation was to be separate from the development funding. Is that still the case?</p>	<p>GEMS includes installation and removal at fixed sites by the Contractor, within program cost budget.</p>
Sect M	General	17	<p>Section L Notional GEMS Schedule</p> <p>Is there a planned overlap between the Phase I study and Phase II proposal?</p> <p>What is the scope of the early IOT&E phase which we assume will be conducted on prototype equipment? Is a full IOT&E required prior to the production decision?</p> <p>How many and what type of sites are required for IOC?</p>	<p>The Phase II RFP will be released as close to the end of Phase I as possible.</p> <p>The published IOT&E is notional. Contractors are encouraged to propose the most cost effective GEMS program.</p> <p>The number and type of sites that are required for IOC is in negotiation. As a minimum, there will be at least one fixed and one transit case GEMS site.</p>
Sect M	General	16	<p>Re Sect M: These funds are available from the FY04 POM. The FY06 POM is in the formative stage so figures for the years beyond FY09 are not included.</p> <p>Do these funds include installation?</p>	<p>Future POM funds, if any, are not included.</p> <p>GEMS includes installation and removal at fixed sites by the Contractor.</p>
Sect M	General	15	<p>Re Sect M: Positive consideration may be given for meeting TRD objective requirements.</p> <p>How can this be evaluated in a proposal for a study phase?</p>	<p>Positive consideration may be given for credible plans and approaches to meeting TRD objective requirements.</p>
Sect M	General	14	<p>Re Sect M: Because of the large number of fixed site GEMS locations, it is impractical to allow all potential offerors to visit all sites prior to submission of their Phase I proposal.</p> <p>Will bidders be allowed to visit any sites prior to the Phase I proposal and/or during the Phase I study?</p>	<p>A contractor conducted site survey is part of Phase I. The Government will provide Phase I participants with as much information as possible.</p>

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Sect M	General	13	Re Sect M: To ensure adequate information, please provide the Government with a list of information you would like to see collected during a site survey Will a draft and/or final survey checklist be shared prior to the survey?	A contractor conducted site survey is part of Phase I. The Government will provide Phase I participants with as much information as possible.
Sect M	General	11	Re Sect M: Prior to releasing the Phase I GEMS RFP, the Government intends to do a site survey at one (1) of the candidate fixed sites. We recommend that you select a site that has both an existing fixed SCAMP / aircrew alerting system and a transportable system.	A contractor conducted site survey is part of Phase I. The Government will provide Phase I participants with as much information as possible.
Sect M	General	229	Prior to releasing the Phase I GEMS RFP, the Government intends to do a site survey at one (1) of the candidate fixed sites. "To ensure adequate information, please provide the Government with a list of information you would like to see collected during a site survey by COB Wednesday (11/26/03).	A contractor conducted site survey is part of Phase I. The Government will provide Phase I participants with as much information as possible.
Sect M	General	9	Re Sect M: The Government is contemplating acquiring the GEMS effort in two phases, the first a study effort and the second the development and production effort. Given a constrained budget and urgent user needs is the multiple study award approach the most efficient (in terms of cost scheduled and risk) way to acquire GEM? Will results from the previous in-house study (referenced in the ORD) be provided to those responding to this request?	The acquisition strategy for Phase I has been established. Phase II acquisition strategy will be determined at the completion of Phase I. The Government is open to suggestions from Industry. Results of the in-house study will not be provided.
Sect M	General	231	Section L Notional GEMS Schedule & Phase I...Study Phase II/Inc 1...Pager, Klaxon, Comm Data Processing System (CDPS), UHF, EHF Phase II/Inc 2...AEHF, VLF/LF Phase II/Inc 3...HF (subject to Navy funding in FY06 POM or later) Note: VLF/LF is currently reflected in Increment 2 based on internal cost estimates. Industry is encouraged to suggest alternate incremental strategies that provide more efficient use of funding and/or more logical design strategies. Other than moving the VLF/LF to Phase II/Inc 2, is it planned to perform all the other waveforms per ORD Version 8.2? Specifically, confirm that EHF LDR being performed in Phase II/Inc 1, and EHF MDR being performed in Phase II/Inc 2?	Contractors are encouraged to propose the most cost effective GEMS program.

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Sect M	General	18	Re Sect M: Industry is encouraged to suggest alternate incremental strategies that provide more efficient use of funding and/or more logical design strategies. Is this statement limited to VLF/LF or do you want to hear suggestions on other incremental strategies? For example focusing on transportable systems (or fixed) could result in deferring effort for site surveys (or packaging for transport), etc. Other incremental approaches include foregoing multiple study awards and beginning development of at least some of the system.	Contractors are encouraged to propose the most cost effective GEMS program. The acquisition strategy for Phase I has been established.
Sect M	General	19	Re Sect M: Subfactor 1, Architecture Add positive consideration for a system that provides the Air Force with synergies with other programs/systems.	Contractors are encouraged to propose the most cost effective GEMS program.
Sect M	General	232	Compared to the ORD, there are a significant number of added requirements in the TRD. Has the CONOPS been updated so that we can better understand how these new requirements should be implemented?	The Concept of Operations is available in section 1.4 of the ORD.
Sect M	General	20	Re Sect M: Subfactor 2, Integrated Processes Add a process for HMI development and periodic updates to meet the needs for the emergency action (EA) community. Add secure facilities and development environments to number 6.	Contractors are encouraged to propose the most cost effective GEMS program.
Sect M	General	21	Re Sect M: From Government email Please note one additional comment, "Potential offerors should provide comments regarding the Government's intent to require all hardware, software and software documentation to be furnished with Government Purpose Rights (GPR) as they are defined in DFARS 252.227-7013. This DFAR is for noncommercial items and Government messages says ALL hardware, software and associated software documentation. Obtaining GPR rights on COTS hardware and software is extremely difficult and most likely cost prohibitive. Typically the only rights received are those provided when the product is purchased. We do not recommend that the government includes COTS hardware, software and software documentation under this clause. We do not have a problem providing GPR for new items newly developed with the appropriate GEMS funding. A definitive answer however cannot be provided until our solution matures and we begin working agreements with potential teammates and vendors. We believe that as we move closer to the final RFP process, we will be better able to determine what hardware and software we could provide with GPR.	Government Purpose Rights (GPR) will be addressed in the SOO for Phase I.

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Sect M	General	12	Re Sect M: All offerors will be asked to use that information as the basis of their equipment installation/removal schedule and costs for the fixed site GEMS. Will existing FSS/AACE equipment be removed at the time of GEMS installation or is there a requirement for concurrent operations and subsequent removal of equipment.	Concurrent operations is not anticipated.
Sect M	Number of Contracts	217	Current: Phase I deliverables will include a Risk Mitigation Plan and System Design Recommended: Phase I deliverables will include a Risk Mitigation Plan, Contractor TRD and System Design. An updated TRD, to be made part of the Phase II contract is recommended.	Phase I is intended to be a description of how the offeror intends to accomplish Phase II and answer the desired output questions discussed during the 1/5/04 Meeting with Industry (posted to HERBB).
Sect M	Number of Contracts	218	Current: For Phase II the Government will conduct a second, full and open competition with a single (1) award. Recommended: For Phase II, Increment 1, the Government will conduct a second, full and open competition with a single (1) award. For Phase II, Increments 2 & 3, the Government reserves the right conduct additional, full and open competitions or award the effort to the Increment 1 contractor. As currently written, the draft RFP potentially poses two problems, one each to the Government and potential bidders. 1) Regarding the best interest of the Government: Due to certain uncertainties beyond the control of the GEMS SPO (SCA, JTRS Mandates, FAB-T execution, AEHF schedule, etc), it is suggested that prior to any Inc 2 award, the government reserve the right to reevaluate available solutions for the upgrades (AEHF, VLF/LF, etc), either strictly within the government, or as a Government/GEMS Prime Contractor team. Although this could lead to a selection other than the vendor supplying the Inc 1 LDR/MDR equipment, this could be in the best interest of the Government, and XXXX would welcome a separate fair and open competition.2) Regarding a difficulty for potential bidders: This section, in conjunction with the Notional GEMS schedule on page 3 is unclear and could be interpreted to require either Inc 1 & 2, or all 3 Increments be bid at the end of Phase I. Item 2 of Subfactor 1 (pg 4) is fairly clear that the Phase II Proposal and Award is strictly for Increment 1 (Cost Plus for SDD Inc 1, FFP for Prod 1, TBD for Fielding 1). Bidding a FFP Option for Inc 2 equipment still early in development, with still evolving requirements (ie AEHF) might not be in the best interests of either the Government or potential bidders.	Phase II Acq Plan will be developed after Phase I completion.

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Sect M and TRD	General	3	The TRD section 3.2.1.2.4.1 General EHF Satellite Communications Subsystem Requirements. Please clarify whether the aggregate baseband data rates in item (c), are for receive, transmit, or both.	Baseband data rates may differ between receive and transmit, but must be consistent with satellite operations.
Sect M and TRD	General	4	Section M indicated that the Phase I Study is a FFP contract, what is the Government's intention for the Phase II contract?	Phase II acquisition strategy will be determined at the completion of Phase I. The Government is open to suggestions from Industry.
Sect M and TRD	General	2	There is a general requirement for SCA compliance. This requirement is repeated in the descriptions of all subsystems except VLF/LF and the CDPS. Is the intent that those two subsystems are exempt from the SCA requirement? XXXX recommends that all subsystems be SCA compliant.	SCA is currently applicable to RF devices operating above 2 MHz. The VLF/LF receiver operates below that range and the CDPS is not an RF device. Current requirements levy compliance on a portion of GEMS. To make all subsystems SCA compliant would be a design prerogative.
Sect M and TRD	General	8	In reference to the Site Survey. XXXX requests that a drawing be supplied that shows antenna placement, distances from the terminal, terrain characteristics and/or a topographic map.	A contractor conducted site survey is part of Phase I. The Government will provide Phase I participants with as much information as possible.
Sect M and TRD	General	7	Recommend that the Government consider simplifying the evaluation criteria for the Phase I effort since it only covers a Study Program with planned funding of \$2M. This would allow a smaller proposal to be submitted that addressed the requirements and criteria.	Phase I is intended to be a description of how the offeror intends to accomplish Phase II and answer the desired output questions discussed during the 1/5/04 Meeting with Industry (posted to HERBB).
Sect M and TRD	General	6	Does the Government have a format, time limitation and limit on the number of attendees established for the orals?	See Section L.
Sect M and TRD	General	5	XXXX recommends that the Phase II Contract include a prototype unit. The objective of the prototype unit is to provide risk mitigation. The GEMS Program involves a complex system, the prototype unit would allow early testing of the system and provide detection of potential system issues that could be resolved early in the program.	Contractors are encouraged to propose the most cost effective GEMS program.
Sect M and TRD	General	1	Recommend deletion of the DII COE requirements. DISA support and maintenance for DII COE are currently planned to end in FY04/05 and contractor maintenance is not a realistic option. DII COE also significantly constrains the choice of operating systems.	See TRD Update.
Section L & M	Section L & M	352	Does the government expect competitor proposals for Phase 1 to be: (1) the approach to execute the study that will result in our plans for accomplishing Phase II; or (2) an initial architectural concept (technical, schedule, estimate) and the approach to further validate that concept and examine other concepts for Phase II consideration; or (3) both (1) and (2); or (4) some other variation/response?	(2)

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TRD	3.1.2.2	39	This section refers to a voice pager but the requirements section refers to voice/data pager.	Noted. "Data" refers to the capability to send text. See also TRD update for pager display, 3.2.1.2.5.2.1.l.
TRD	3.2.1.2.1.2(a)	253	The VLF/LF portion of GEMS shall consist of a dual channel VLF/LF receiver. □Mandate of a dual channel receiver limits potential VLF/LF solutions. Please Clarify if this is the intent. If not see proposed rewording for items 21 through 24. The VLF/LF portion of GEMS shall consist of a scanning VLF/LF receiver.	A dual channel receiver is the intent.
TRD	3.2.1.2.4.1.c	267	At a minimum and as limited by the connected satellite system, the satellite communications subsystem shall be capable of supporting simultaneous operation on four receive services to a minimum aggregate baseband data rate of 2.208 Mbps and an objective data rate of 20 Mbps. This requirement should be broken into two requirements. One for receive and one for transmit. It is not possible to transmit at an aggregate rate of 20 Mbps on AEHF. The maximum standard rate is 8.192 Mbps transmit. Clarify breakdown of aggregate rate between TX and RX. This requirement should be broken into two requirements. One for receive and one for transmit. It is not possible to transmit at an aggregate rate of 20 Mbps on AEHF. The maximum standard rate is 8.192 Mbps transmit. Clarify breakdown of aggregate rate between TX and RX.	Distinction included for MILSTAR and AEHF operations.
TRD	3.2.1.5.5.o	100	Suggest rewording the requirement to "An operator headset with volume control and a manually operated push-to-talk footswitch"	Intent is to have volume control for the headset and to be able to assert PTT manually or with footswitch.
TRD	3.2.1.5.5.z	101	How will the internet be used in this system?	This is an objective requirement intended to support interoperation with the Global Information Grid.
TRD	3.2.1.5.6.f	104	How much data is equated to 30 days (60 days)? How is this quantified?	Would depend on design approach to providing storage.
TRD	3.2.1.5.7.3.c	110	Message Routing and Storage What is the 'other data' that needs to be logged, routed and suppressed? What 'routing' is required for received messages?	See ID item 92 for stored items. Required routing is that necessary to support GEMS requirements. This includes storage, display, and message relay/forwarding.
TRD	3.2.1.7.d	114	There is no mention of a "portable time reference" in the interfaces section, will this information be provided?	Specification of a portable time reference and its interface is part of GEMS design.
TRD	3.2.2.1.3.a (3)	119	Can the Government provide specifications, ICD's, etc for the MEPS generator equipment?	See TRD Update

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TRD	3.2.2.2.g, h, and Table 3.2.2-2	123	The requirements in these paragraphs are generic in nature. Test methods, vibration spectra, durations, number of sweeps, etc. are not identified in Table 3.2.2-2. Can the specifics be provided to cover all modes of transport (Type M-vehicles, ship, cargo aircraft, loading, unloading, transport, etc.) for shock, vibration and any additional transportation requirements?	See TRD Update.
TRD	3.2.2.3, 3.2.2.2, 3.2.2.5.2, & 4.4.1.5	127	<p>Section 3.2.2.3 differentiates the requirements for indoor vs. outdoor equipment but gives no guidance for determining the equipment indoor vs. outdoor designation. Section 3.2.2.5.2 indicates that equipment collocated with the antenna and the Klaxons are designated as outdoor equipment and that all other equipment is by default indoor equipment. Section 3.2.2.2 refers to a source of heating/cooling air being provided to the equipment in transit cases. Section 4.4.1.5 of the GEMS ORD (Ver 8.2c) indicates that the equipment that is not collocated with the antenna in a non-environmentally controlled shelter (e.g., tent).</p> <p>Can we assume that only the equipment collocated with the antenna is required to meet the outdoor requirement and that all other equipment is indoor equipment?</p> <p>Can we assume that equipment sheltered in a tent but provided heating/cooling air meet the definition of indoor equipment?</p> <p>Are all transportable components considered outdoor equipment?</p>	<p>No. Par 3.2.2.5.2 is related fallout exposure but provides some insight into equipment likely to be designated as indoor or outdoor. The final determinate, however, is dependent on where the equipment is sited by virtue of GEMS design.</p> <p>Not if the environment includes a fallout threat. If the equipment is not always collocated with personnel, then it could be exposed to fallout and, therefore, regarded as outdoor equipment.</p> <p>No. All components have to be transportable, but not all have to meet requirements for outdoor equipment. The transportation and storage environment does not imply either an indoor or outdoor equipment designation. An indoor component, for example, is only required to operate between 0 and 49 C while an outdoor component must be capable of operation between -54 and +49 C. Both must be capable of withstanding storage and transportation temperatures between -57 and +68.</p>
TRD	3.2.2.5 General Comments	341	The term "operate through" cannot apply to reception or transmission of R.F. signals, and some data signals, in a nuclear "trans-attack" mode due to physical limitations of the atmosphere where MIL-STD-2169B applies. The system can be designed to survive without damage and recover as outlined in a "post-attack" scenario	There are specific requirements for operate through in the TRD (now Para. 3.2.2.4.c), and the TRD wording is being changed to associate these requirements with "operate through".
TRD	3.2.2.5 General Comments	340	It is assumed, from wording of the TRD, that GEMS system components will not be exposed to critical Gamma Dose Rate levels. Unlike HEMP, Gamma radiation cannot be shielded in a practical manner as a method of preventing interaction with sensitive electronic components. If this statement is not true, then Dose Rate detection and corresponding electronic circumvention will be required in order to meet the trans-attack and post-attack requirements.	There is no near-by detonation requirement that would lead to needing to survive a specific dose-rate for GEMS. There is a fallout (total dose) requirement on equipment that is not co-located with people. Examples would be equipment that is co-located with the antennae and equipment that is co-located with klaxons.
TRD	2.0	198	When will the documents referenced in the applicable documents section be made available? When will the GEMS library be established and made available?	12/23/03.

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TRD	2.1	235	Refer to Appendix A (Submitted) for updated references and comments.	See TRD Update.
TRD	3.1	32	What is the definition of an 'evolutionary' change?	"Evolutionary changes" should be changes to incorporate requirements not currently defined. Future capabilities have to meet same (JTA) requirement (sub par a).
TRD	3.1	31	What does 'COE IAW COE' mean?	See TRD Update.
TRD	3.1	33	Where are the time allocations defined for each process in order to determine if recovery can occur within the defined allocated time?	Time allocations are part of contractor design process with overall performance governed by 6811. Components of time budget are not part of this TRD.
TRD	3.1	219	Current: a. It shall comply with the DoD JTA, SCA, and COE IAW COE. Recommended: a. It shall comply with the DoD JTA, SCA, and COE IAW COE as specified in the GEMS ORD. As currently written, the TRD could be interpreted to require JTA, SCA, etc compliance for all equipment, including Pagers, Klaxons, VLF, and the Inc 1 EHF.	See TRD Update.
TRD	3.1 (a)	236	Is it to be assumed that SCA compliance means SCA certified?	That is correct. A radio must be certified before being considered SCA compliant. For details on certification, please go to HTTP://JTRS.ARMY.MIL and click on the Test and Certification hot link.
TRD	3.1(d)	237	GEMS shall be designed to interoperate with intelligence infrastructure support and not require changes to that support. This is not a readily verifiable requirement and may require significant analysis to demonstrate meeting it.	See TRD Update.
TRD	3.1.1	238	GEMS shall provide the basic functions of configuration management, communications, support, and security as defined herein. Makes the requirement clearer and the details for accomplishing same are defined in the TRD.	See TRD Update.
TRD	3.1.2	239	Please clarify the intent of the reference to "maintain". Is the intent to define the physical interfaces, leaving the developer without trade space?	The intent is provide sufficient definition of the resultant system so that the Government is confident its needs are being met.
TRD	3.1.2	240	Figure illustrates two 500-ft remote interfaces for separation of Radio System/Antenna Group (1) and CDPS/Radio System (2). TRD paragraph 3.2.1.5.5 requirements define additional remote between Operator Interface and CDPS. Figure needs to reflect requirements.	See TRD Update.

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TRD	3.1.2.	178	Could the function of "landline interfaces" be clarified. (i.e. types of voice and message requirements, EAM's? Messages? Other? Classification?) Also does presence of landline imply international host nation certification is required to accommodate potential interconnections to foreign switching systems?	Initially, such a configuration can also be viewed as a CONUS-only, relay/forward operation arising from STE connection where GEMS receives EAM then relays/forwards via EHF. Other traffic, such as database updates, and OCONUS operation would result from evolving CONOPS.
TRD	3.1.2.1.2.1	241	The Very Low Frequency/Low Frequency (VLF/LF) Receiver as integrated into GEMS, shall automatically receive, amplify, demodulate, decrypt, and process secure and non-secure messages during benign and stressed conditions (jammed, nuclear or both). Messages originate from the President and Secretary of Defense (SECDEF), the Minimum Essential Emergency Communications Network (MEECN), and the United States Strategic Command (USSTRATCOM). Changed for clarity and verifiability developers cannot verify the source of messages..	The intent is that a capability be provided which receives messages vice confirm the source. No change.
TRD	3.1.2.1.2.1	200	Why are there "shalls" in this paragraph and not in other paragraphs in the "Interface" section?	No special meaning should be inferred from the difference in text construction.
TRD	3.1.2.1.2.1	243	GEMS shall be backwards compatible with legacy VLF/LF baseband functions/devices as defined herein. The specific function/devices must be identified specifically herein or by specific reference in order to be verifiable.	"Legacy" VLF/LF baseband functions refers to the baseband signals in the MEECN system (Mode 15, Mode 9, MMPM, HIDAR) vice devices.
TRD	3.1.2.1.2.1(b)	242	GEMS shall be interoperable within the MEECN architecture as defined herein Reworded to make it a verifiable requirement. The requirements and references to the applicable MEECN documents herein provide a clear method and set of requirements to accomplish verification.	Suggested text implies that TRD is defining MEECN architecture. No change needed.
TRD	3.1.2.1.2.1.b	199	Please make available the MEECN architecture defined in 2 Sep 91 OSD Strategic C3 review. This reference was not in the applicable documents section.	Open.
TRD	3.1.2.1.2.1.c	179	The baseband function requirement is unclear. Does this requirement mean that GEMS needs to be interoperable with legacy baseband devices, or procedures? Are these requirements in addition to the EAM processing requirements 3.2.1.5.7? No baseband devices are specified in 3.2.1.2.1. VLF/LF Receive System section, though KG-30 and replacement interfaces are referenced (3.2.1.2.1.18, 3.2.1.4.1).	Legacy VLF/LF baseband functions refers to the baseband signals in the MEECN system (Mode 15, Mode 9, MMPM, HIDAR).

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TRD	3.1.2.1.2.1.c	37	Please define what "backwards compatible with legacy VLF/LF baseband functions" means, specifically the words: baseband functions. Does this relate to Intermediate Frequency (IF)?	Legacy VLF/LF baseband functions refers to the baseband signals in the MEECN system (Mode 15, Mode 9, MMPM, HIDAR).
TRD	3.1.2.1.2.4	245	EHF interoperability refers to a terminal's/system's capability to support communication with other EHF/AEHF Terminals via various EHF and AEHF satellites with EHF Low Data Rate (LDR) and Medium Data Rate (MDR) communications payloads as well as the future AEHF Extended Data Rate (XDR) waveform and the Advanced Polar EHF satellite system using the interoperable modes, coding and baseband devices defined in SR-1300, SR-2300, SR-3300, and TBD. Clarifies interoperability	See TRD Update.
TRD	3.1.2.1.2.4	244	The AEHF segment of GEMS will interoperate with EHF and Advanced EHF (AEHF) terminals. EHF and AEHF Terminals, operating in the EHF spectrum, will provide survivable communications to meet the requirements of the Nuclear Command and Control System (NCCS) Technical Performance Criteria (NTPC). Clarifies that the GEMS AEHF does interoperate with other Legacy (EHF) and new AEHF terminals. The AEHF System supports Legacy (EHF) and AEHF Terminals. The AEHF System includes Milstar I/II and AEHF Satellites. Legacy terminals are EHF terminals not upgraded to AEHF capability. AEHF Satellites support Backward Compatible (BC) operation with Legacy Terminals (EHF) and AEHF Terminals required to be interoperable with legacy terminals.	No change required. Recommended change would cast GEMS as an AEHF terminal whereas GEMS uses EHF and/or AEHF terminals.
TRD	3.1.2.1.2.5	38	Please provide additional technical requirements on this new GEMS interface. None are present in the requirements section of the TRD.	Interface requirements are identified in paragraph 3.2.1.4.1.o.
TRD	3.1.2.1.2.5	246	An Secure Terminal Equipment (STE) interface shall be provided by GEMS to support, at a minimum, EAM traffic using public or military switched telephone systems.	See TRD Update.
TRD	3.1.3	40	Is GFE usually identified in a TRD?	A GFE List is a contractor supplied CDRL item in Phase I.
TRD	3.1.c	145	Please clarify "shall be designed to interoperate with intelligence infrastructure support and not require changes to that support." Is there a document that describes the infrastructure support?	Open.
TRD	3.2	41	We believe the term "National Command Authority", this term is no longer used. The new ref. is "President and Secretary of Defense".	See TRD Update.

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TRD	3.2.1.1	247	Default data bases for EHF/AEHF operation can become invalid very quickly because of evolving nature of Milstar/AEHF. This occurs because of the changing population of terminals and satellites and reallocation of Payload resources. A default data base may be valid for development but become obsolete within 6 to 12 months. Having same also conflicts with AEHF System Security Requirements for EHF/AEHF operations. Recommend revisiting requirement for default data bases for VLF/LF, HF, UHF, EHF, AEHF operations.	Default data base necessary to support rapid system restoral. GEMS requires capability to maintain current operational state.
TRD	3.2.1.1(d-v)	248	These should all be rewritten with shalls as is done in 3.2.1.2	"Shall" in intro paragraph applies to all sub-paragraphs.
TRD	3.2.1.1.	180	Is the configuration data referenced on Page 23, 3.2.1.1 black (unclassified)?	The contractors design of this database, will determine its classification.
TRD	3.2.1.1.m	42	What does 'multidestination-net operation' mean?	The term is defined within the text. The intent, using EAM transmission/relay as an example, is to allow the simultaneous transmission via more than one media "UHF-LOS and HF, for example" while both are either cipher text or plain text, but not mixed.
TRD	3.2.1.1.m	43	What is the intent of this requirement?	The term is defined within the text. The intent, using EAM transmission/relay as an example, is to allow the simultaneous transmission via more than one media "UHF-LOS and HF" for example while both are either cipher text or plain text, but not mixed.
TRD	3.2.1.1.p	44	What are 'disallowed configurations'? Where are these defined? Are they static or dynamic based on a particular site? What is the intent of this requirement? Is this to allow an operator to override some action? If so, could you provide an example?	"Allowable" configurations are those that support mission operations in accordance with rules for connectivity. One such would be data rate employment wherein a configuration was attempted which employed MDR data rates when LDR service was available. Another could be the attempt to establish a multidestination net wherein one external link employed secure voice and another link was unenciphered. In both cases, the system should advise the operator that the configuration was 'disallowed because....'
TRD	3.2.1.1.p	45	The real intent of asking this question is due to the alternate solution which prevents the operator from configuring disallowed configurations	The meaning of the comment is unclear.
TRD	3.2.1.2(k)	249	Employment of encryption equipment shall be supported by the communications function as defined herein. Creates a verifiable requirement.	The intent with "where required" is to provide design flexibility to incorporate/integrate encryption where needed and when appropriate. "As defined herein" is design-specific. No change required.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2(l)	251	Item I:"failure of any element unique to communications processing, communications interface device....does not affect the capability of any other element to support communications functions."□Unclear EHF LDR/MDR and AEHF XDR are considered separate 'elements'. If so, requirement appears to drive redundancy in EHF Antenna Group components and Power Sources, resulting in significant radio system cost. Our assumption is that EHF/ LDR/MDR and AEHF XDR functions will provide redundant communications capability to VLF. Therefore, EHF subsystem components need not be redundant.	The assumption of EHF and VLF providing redundancy, one for the other, is correct. Note that the intent of the requirement is that a problem with one communications transport subsystem should not have an impact on the capability of any of any other communications transport subsystem to support communications. No change is necessary.
TRD	3.2.1.2(o)	250	GEMS shall meet the EAM Receipt Timing criteria established in Table E-1 through Table E-8 of appendix E to enclosure A of the CJCSI 6811.01A It is assumed that the EHF/AEHF services are configured by the JCS planners to meet these criteria. The terminal can only implement the EHF/AEHF functions as defined in the System Specifications and ICDs. Therefore it is assumed the CJCSI requirements were at one time flowed to the EHF/AEHF System requirements.	Noted.
TRD	3.2.1.2.1	159	Is compliance with JTRS SCA required for VLF/LF?	SCA/JTRS compliance for VLF/LF is not a requirement.
TRD	3.2.1.2.1.10.a	54	Impulsive atmospheric noise and other sources such as arcing by power lines will have some effect on the CER no matter how carefully the clipper/limiter/puncher tapered chain is designed and implemented; can the words "shall not degrade" be modified?	See TRD Update.
TRD	3.2.1.2.1.10.b	55	The word "circuitry" is used in the text; can software-implemented schemes be used?	The Contractor can propose his own implementation.
TRD	3.2.1.2.1.13.b	56	Please explain the need for 850 knots. Is the AF contemplating using undemodulated real-time airborne repeaters where they "strap-through" VLF/LF signal at IF from receiver to transmitter on one aircraft and same thing on another? Will the AF be implementing aircraft-aircraft repeating without first demodulating/decoding received signal?	See TRD Update. GEMS is a ground based system.
TRD	3.2.1.2.1.14	57	Is the "-22.5 kHz" a typo? Should it be "-22.5 dB" Does the 0 dB SNR in 1 Hz bandwidth include the antenna's self noise?	See TRD Update. Antenna noise is included.
TRD	3.2.1.2.1.18(d)	291	"..and / or any NSA Designated Key Loading Device." Please specify the devices the AF plans to use.	Open.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.1.2	252	Paragraph 3.2.1.2.1.2 defines a SLVR type receiver. The other paragraphs detailing the VLF requirements (except HIDAR Plus) are almost word for word from the MRT 616A spec; These requirements, as worded, will severely restrict the options for the VLF solution.	The requirement is correctly stated. No change required.
TRD	3.2.1.2.1.2 c	255	The first channel shall be capable of performing frequency scanning and mode search for a minimum of four operator selected transmission sources The VLF/LF receiver shall be capable of frequency scanning and mode search for a minimum of four operator selected frequencies.	A dual channel receiver is the intent. No change required.
TRD	3.2.1.2.1.2(b)	254	The channels shall be independent one from the other and each shall perform its processing independently. Recommend deleting this requirement.	A dual channel receiver is the intent. No change required.
TRD	3.2.1.2.1.2(d)	256	The second channel shall be able to continuously process one of four operator selected transmissions sources. The VLF/LF receiver shall alternately be capable of fix tuning to one of four specified frequencies by operator selection.	A dual channel receiver is the intent. No change required.
TRD	3.2.1.2.1.2.a	49	Dual-channel receiver implies essentially two receivers; can functions be shared? Does "perform processing independently" mean we can't use one computer? Does each channel have to provide for nulling two jammers?	Two independent channels are required. The implementation is up to the contractor. Jamming requirements apply to each channel independently.
TRD	3.2.1.2.1.3(f)	257	Paragraph 3.2.1.2.1.3f defines how much memory and processing power is needed for HIDAR Plus. This is broken down into two parts, Low Data Rate and High Data Rate. Need clarification as to whether the Low and High Data Rates are being processed in simultaneously or one at a time (parallel or in series).	For planning purposes, "parallel" is suggested as it accommodates two channel operation.
TRD	3.2.1.2.1.3.b	50	Does this imply automatic message piecing?	Yes.
TRD	3.2.1.2.1.6	51	The specified dynamic range of 120 dB is what was specified for the old R-1395 SLFCS receivers. The replacement radios have a dynamic range of 95 dB. The issue here is the additional D/A conversion and processing required for the 120 dB; is this requirement correct?	See TRD Update.
TRD	3.2.1.2.1.7	52	Is this the in-band defense requirement?	See TRD Update.

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TRD	3.2.1.2.1.7	53	What is meant by "Random IF Interference"? Usually this means external signal leaking into IF chain (Rhode and Whitaker, Communications Receivers, 3rd ed). Is there a concern about IF interference from cable pickup? Is "IF" a misprint, and should it be "RF"?	See TRD Update.
TRD	3.2.1.2.2	160	Please specify specific interoperability requirements for "JTRS radio sets".	The requirement in subpar c is intended to govern RF interoperability with the listed HF transceivers when they are employing the same waveform.
TRD	3.2.1.2.2(J)	259	Please clarify the requirement to interface to a 28 VDC source when the power requirement/solution is to be determined by the developer.	Requirement provides flexibility to use GEMS-provided 28 VDC or site-provided 28 VDC. Note that this is an objective requirement.
TRD	3.2.1.2.3.1	260	Is HAVEQUICK clear and secure voice and data the only UHF waveform to be supported?	Qualified 'yes.' No specific UHF data requirement exists unless digital secure voice is regarded as data.
TRD	3.2.1.2.3.2.b	58	Is this measured in the presence of a jamming signal? If so, what are the jammer characteristics?	Open.
TRD	3.2.1.2.3.3.a	59	What is the definition of "collocated"?	Open.
TRD	3.2.1.2.3.3.a	182	In our opinion, bounding of UHF transmitters is needed. Does this also imply a multiplication of baseband interfaces? (3.2.1.2.3.1 a) The intent here is to describe the co-site interference that must be dealt with in a multi-radio environment. The number of cooperating UHF LOS transmitters is TBD.	See Updated TRD.
TRD	3.2.1.2.3.3.a (4)	60	Is there a jammer in addition to the collocated radios? If so, what are the jammer characteristics?	Open
TRD	3.2.1.2.3.4.b & c	61	Are the distances specified unobstructed?	The distances are unobstructed.
TRD	3.2.1.2.3.4.h	62	No tolerance is specified. Suggested wording might be "UHF antenna impedances shall match that of the mated transceiver such that a VSWR equal to or less than 2:1 is provided at the radio antenna connector over the band 225 to 400 MHz."	See TRD Update.
TRD	3.2.1.2.4(a)	261	GEMS shall include an EHF satellite communications subsystem, consisting of an EHF radio subsystem and EHF antenna subsystem, to support communications using Milstar, AEHF, UFO-E, and UFO-EE satellites. As stated limits the developers trade space to implement a reliable cost effective GEMS subsystem solution.	Recommended "radio subsystem" change does not add or detract from "trade space."

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.4(b)	262	GEMS, to the extent provided by existing EHF satellite communications systems when employed, shall comply with anti-jam requirements as defined in SR-2000, SR-3000. EHF/AEHF System Specifications and ICDs define the performance requirements and is assumed captured the CRD requirements many years ago. Anti Jam performance is primarily a function of implementation of the Waveform and only secondarily by terminal implementation.	See TRD Update.
TRD	3.2.1.2.4(f)	264	GEMS shall be backwards compatible with legacy EHF baseband functions associated with individual EHF services/networks as defined in SR-2300 and SR-3300. Creates an unambiguous verifiable requirement.	See TRD Update.
TRD	3.2.1.2.4.1(a)	265	GEMS shall be capable of interoperating with DoD EHF/AEHF terminals in accordance with SR-1300, SR-2300 and SR-3300. The DoD Terminals include at a minimum, the Airborne Wideband Terminal (AWT), the Command Post Terminal (CPT), Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T), Single Channel Anti-jam Man Portable (Terminal) (SCAMP), Minuteman MEECN Program (MMP), Multi-Mission Mobile Processor (M3P), and Navy EHF Satellite Program (NESP) and Navy Multiband (NMT) terminals. The requirement as written will require a terminal of each configuration be provided or available to perform verification testing. This significantly expands the terminal integration and test scope. Wording changes proposed mitigate this, i.e. verification in accordance with the ICDs will mitigate need for array of terminals to perform integration and verification testing.	The intent of the requirement is to result in design that is interoperable with the identified terminals. Documentation recommended is correct to support design/implementation.
TRD	3.2.1.2.4.1(b)	266	The satellite communications subsystem shall be interoperable with Milstar, AEHF, UFO-E, UFO-EE, and Advanced Polar EHF Satellite communications media options in accordance with SI-1135, SI-3135, PMW-145 and TBD respectively.	See TRD Update.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.4.1(d)	268	GEMS shall be capable of simultaneous LDR, MDR operations and simultaneous LDR, MDR and XDR operations on a single downlink carrier to communicate with agencies employing a Milstar/AEHF capability. Clarifies the LDR/MDR is simultaneous when operating on LDR/MDR - as defined in SI-2035. Clarifies simultaneous operation for LDR/MDR/XDR operation when on a single D/L carrier when using AEHF satellite. Constraining this definition constrains the terminal implementation to one that is affordable and realizable. This is consistent for terminals currently implemented and planned for implementation.	See TRD Update.
TRD	3.2.1.2.4.1(g)	269	As an objective, GEMS should be configurable for simultaneous en-route threat and target updates for both conventional and nuclear operations without degrading or pre-empting the continuous operation of strategic FD and FM networks. Please clarify. Does this mean that the GEMS should be designed to connect to EHF/AEHF antennas on a transport aircraft during transit? Otherwise this is interpreted to mean that the EHF subsystem may need to support additional services (NETs or PTPs).	Use during transit is not intended. GEMS will receive threat and target updates via EHF. This is outside of EAM activities. Formats and CONOPS for the information being received and the means by which the information will be passed on are being developed and are not expected to be available for GEMS until increment 2.
TRD	3.2.1.2.4.1(h)	271	The EHF satellite communications subsystem shall incorporate transmission power levels, antennas, and/or signal processing as necessary to ensure meeting the PCMR defined in CJCSI 6811.01A, Appendix F, Enclosure A, Tables F-1 and F-2 (Verify tables) Recommend this requirement be deleted as the EIRP for the terminal has already been specified by reference to SR-3000 Appendix M.	Requirement is to provide performance necessary to meet PCMR. Performance not limited to EIRP. No change required.
TRD	3.2.1.2.4.1(i)	272	Specifies 5 minute acquisition from cold-start. Need to clarify what constitutes the start of the 'cold start' process (i.e., relative to terminal image, keys, time source, etc)	See TRD Update.
TRD	3.2.1.2.4.1(j)	273	The EHF satellite communications subsystem shall satisfy the spectral purity, spurious signals, out-of-channel and out-of-band emissions for Frequency Shift Keying (FSK), Phase Shift Keying (PSK) Wideband, and PSK Narrowband transmissions in accordance with SI-1135, SI-2035 and AEHF SR-3000 Appendix M SR-3000 specifies the AEHF performance required of AEHF Terminals.	See TRD Update.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.4.1.g	161	Please clarify what is meant by " simultaneous en-route threat and target updates.... Without degrading or pre-empting the continuous operation of FD and FM networks."	Use during transit is not intended. GEMS will receive threat and target updates via EHF. This is outside of EAM activities. Formats and CONOPS for the information being received and the means by which the information will be passed on are being developed and are not expected to be available for GEMS until increment 2.
TRD	3.2.1.2.4.1.l	162	Please provide the analysis, or direct us to the analysis, for determining that "50 minutes for D/L acquisition in stressed environment" and "5 minutes to D/L complete from a cold start" are requirements.	See TRD Update.
TRD	3.2.1.2.4.1.k	163	Please provide teleport definitions and interface description.	Open.
TRD	3.2.1.2.4.2	274	Throughout this section replace "EHF Module" with "EHF Radio Subsystem".	Recommended change carries same intent. No change necessary.
TRD	3.2.1.2.4.2	220	Current: b. (6) Interoperation with a minimum of two antennas with switching between two antennas such that no bit errors occur in the decoded data Recommended: Clarify the need for this capability. No other sections of the TRD indicate a two EHF antenna configuration. The relationship of this requirement to either the GEMS ORD, Concept of Operations or other sections of this TRD cannot be found. The impacts of this requirement as written are quite significant and the background associated with it needs to be fully explained prior to submitting a proposal.	The requirement is deleted.
TRD	3.2.1.2.4.2 and 3.2.1.2.5.1.r	183	Does the EHF terminal also have EHF network control or EHF fence control functions?	Neither.
TRD	3.2.1.2.4.2(a)	275	The EHF Radio Subsystem shall accept baseband signals from the CDPS and perform all processing and modulation functions required by the applicable Payload to Terminal Interface Control Document appropriate to the connected satellite to provide a signal to the EHF antenna subsystem for transmission.	No change necessary.
TRD	3.2.1.2.4.2(b)4	276	Support status determination including operating state of external amplifiers and interlock switch position and antenna-beam/antenna boresight misalignment to a satellite.	See TRD Update.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.4.2(d)	279	"The EHF Radio Subsystem shall include necessary routing, protocol conversions, and data rate handling to support connectivity to a communications service."	No change required.
			Requirements as written mandates dedicated physical data port for each communications service. The requirement eliminates the trade space the developer should have to implement a solution for the communications needs for a reliable low cost solution.	
TRD	3.2.1.2.4.2(e)	280	The EHF Module Radio Subsystem shall include necessary routing, protocol conversions, and data rate handling to support connectivity between a communications service and CDPS.	No change necessary.
			Requirements as written mandates dedicated physical data port for each communications service. The requirement eliminates the trade space the developer should have to implement a solution for the communications needs for a reliable low cost solution.	
TRD	3.2.1.2.4.2(g)2	281	"When a manual safety interlock switch, located at the remote antenna subsystem, is open ". Clarify that an emission override control is located at remote antenna subsystem.	See TRD Update.
TRD	3.2.1.2.4.2(g)3	282	(3) In all directions below an operator selectable /overrideable elevation angle...	No change necessary.
			Blockage tables for fixed installations are normally input as part of a terminal data base load – that if needed can be over ridden by an operator.	
TRD	3.2.1.2.4.2(g)4	283	(4) Around a cone of operator-selectable width and centered on a selectable/over ride able azimuth and elevation	No change necessary.
			Blockage tables for fixed installations are normally input as part of a terminal data base load – that if needed can be over ridden by an operator.	
TRD	3.2.1.2.4.2.c	164	Please clarify why PMW 146-S-002 is required.	ICD for UHF-FO Satellites.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.4.2.c	278	The EHF Module Radio Subsystem shall support satellite communications media interoperability IAW SI-1135, SI-2035, SI-3135, SR-2300, SR-3300, and PMW 146.	See TRD Update.
			Added SI-3135 in place of AEHF Payload Terminal ICD. Deleted MIL-STD-1582 and 188-136 as these documents are subsets of SI-1135 and SI-2035. Verifying to the 100's of requirements in the ICDs is a significant effort for no value added. Further there are no certified Satellite Simulators to perform verification testing against.	
TRD	3.2.1.2.4.3	222	Current: i. The EHF antenna subsystem in concert with the EHF module shall meet the Gain to Noise Temperature (G/T) requirements in Table M-9 in Appendix M of SR-3000 relative to RHCP incident energy. Recommended: i. The EHF antenna subsystem in concert with the EHF module shall meet the Gain to Noise Temperature (G/T) requirements for Terminal Type Fixed Site SCAMP (FSS Replacement) in Table M-9 in Appendix M of SR-3000 relative to RHCP incident energy. Table M-9 of Appendix M Rev. M of SR-3000 dated 7 August 2002 lists eighteen Terminal Types with various G/T requirements. The type suggested appears to be the most appropriate. The full list of Terminal Types from SR-3000 is provided at the end of this table.	Reference to specific terminal types not incorporated because it may represent performance that does not meet GEMS needs. EIRP and G/T for GEMS should be a product of GEMS design and represent performance for conditions described.
TRD	3.2.1.2.4.3	221	Current: g. The EHF antenna subsystem, in concert with the EHF module, shall meet the minimum Effective Isotropic Radiated Power (EIRP) requirements in Table M-9 in Appendix M of SR-3000 relative to a Right-Hand Circular. Recommended: g. The EHF antenna subsystem, in concert with the EHF module, shall meet the minimum Effective Isotropic Radiated Power (EIRP) requirements for Terminal Type Fixed Site SCAMP (FSS Replacement) in Table M-9 in Appendix M of SR-3000 relative to a Right-Hand Circular. Table M-9 of Appendix M Rev. M of SR-3000 dated 7 August 2002 lists eighteen Terminal Types with various EIRP requirements. The type suggested appears to be the most appropriate. The full list of Terminal Types from SR-3000 is provided at the end of this table.	Reference to specific terminal types not incorporated because it may represent performance that does not meet GEMS needs. Also See Updated TRD.
TRD	3.2.1.2.4.3(b)	284	States requirement for antenna separation. Similar requirements for UHF, HF, etc. Clarification requested as to whether power is provided. Also, do requirements allow separation to a common site, allowing sharing of a common power source. If not, significant cost/volume impact will be incurred for multiple remote power sources.	Availability of prime power at a site can be assumed. Employment and distribution of power for GEMS use is part of the design.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.4.3(d)	285	The EHF antenna subsystem shall support operation in the EHF transmit band of 43.5 GHz to 454.5 GHz and in the SHF receive band of 20.2 GHz to 21.2 GHz.	See TRD Update.
TRD	3.2.1.2.4.3(f)	286	<p>The EHF antenna subsystem shall be capable of tracking the downlink such that the performance achieved at peak of beam with the specified G/T is achieved to include pointing/tracking losses. in stressed and unstressed environments from that obtained when the peak of the antenna beam is pointed at the satellite when operating on a slope having a grade of 6 degrees or less in any direction.</p> <p>The requirement as stated dictates a specific implementation approach. The requirement is restated to provide the developer trade space to implement an antenna pointing/tracking capability at the lowest cost that meets the specified performance. 3.2.1.2.4.3 was changed to specify EIRP with pointing loss therefore specifying the pointing /tracking error is not needed for EIRP.</p>	See TRD Update.
TRD	3.2.1.2.4.3(g)	287	<p>The EHF antenna subsystem, in concert with the EHF Radio Subsystem, shall meet the minimum Effective Isotropic Radiated Power (EIRP) requirements in Table M-9 in Appendix M of SR-3000 for the Strategic Mobile Team Terminal, relative to a Right-Hand Circular Polarization (RHCP) antenna over the entire transmit frequency range and over the antenna coverage area. If the antenna is contained within a radome, the EIRP requirements will apply at the radome/free space interface. EIRP includes any radome insertion loss, and EHF antenna subsystem shall meet the minimum EIRP requirements in the presence of a maximally moisture-soaked radome which has all required coatings. A radome is maximally moisture -soaked when the moisture content throughout the thickness of the radome is uniform, at an ambient atmospheric relative humidity of 85 %.</p> <p>This is a suggested Terminal Type that exists in SR-3000 to use as GEMS does not appear in SR-3000. It would seem that GEMS needs to be added to the AEHF ORD and flowed down into SR-3000. This is needed so other AEHF System Elements will have requirements to support GEMS such as the Key Generation/ Rekey System, Mission Planning System, etc. The change to including pointing/tracking losses in the EIRP provides the developer trade space for allocations between amplifier and antenna size and antenna positioner/support assembly performance characteristics. This will allow the developer to provide an optimum solution to meet performance, at the lowest cost.</p>	Reference to specific terminal types not incorporated because it may represent performance that does not meet GEMS needs. EIRP and G/T for GEMS should be a product of GEMS design and represent performance for conditions described.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.4.3(i)	289	<p>The EHF antenna subsystem in concert with the EHF Radio Subsystem shall meet the Gain to Noise Temperature (G/T) requirements in Table M-9 in Appendix M of SR-3000 for the Strategic Mobile Team Terminal relative to RHCP incident energy. The SHF receiver performance is specified as minimum G/T, expressed in dB/K referenced to a 50 K sky temperature in clear conditions, over the entire receiver frequency range and 5 degree elevation angle, with the transmitter operating at full power.</p> <p>Same as previous comment for paragraph 3.2.1.2.4.3(g).</p>	GEMS requirements are based on performance necessary for its applications. Reference to the Strategic Mobile Terminal (SMT) is not incorporated because the SMT may represent performance that does not meet GEMS needs. EIRP and G/T for GEMS should be the product of GEMS design and represent performance for conditions described.
TRD	3.2.1.2.4.3(k)	288	(2) The capability of being pointed from 0 degrees to zenith in elevation relative to horizontal and of being rotated continuously in azimuth. Continuous rotation in azimuth is a major cost drive to the antenna subsystem.	Open.
TRD	3.2.1.2.4.3(k)1	290	This requirement is potentially in conflict with the requirements of h and I above. Recommend this requirement deleted and the applicable EIRP and G/T values are specified in h and i above. This provides the developer verifiable requirements.	Reference to specific terminal types not incorporated because it may represent performance that does not meet GEMS needs. EIRP and G/T for GEMS should be a product of GEMS design and represent performance for conditions described.
TRD	3.2.1.2.4.c	263	<p>GEMS, to the extent provided by existing EHF satellite communications systems when employed, shall comply with LPI/LPD requirements as defined in SR-2000 and SR-3000.</p> <p>EHF/AEHF System Specifications and ICDs define the performance requirements and is assumed captured the CRD requirements many years ago. Anti Jam performance is primarily a function of implementation of the Waveform and only secondarily by terminal implementation.</p>	See TRD Update.
TRD	3.2.1.2.5.1	66	<p>Should the operator using the CDPS be able to activate any one (single) klaxon?</p> <p>Should the operator using the CDPS be able to activate any one (single) alert light?</p>	<p>Activation of the klaxons/alert lights is activation of the system vice individual elements.</p> <p>No distinction should be drawn between klaxons and alert lights. Both are provided together giving the User a choice of using either or both. One provides the User with an alternative to the other. Providing both supports use in environments where lights are more appropriate than sound or vice versa.</p>

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.5.1.d	184	What types of services are implied? Perhaps message processing, additional interfaces, and other baseband services?	At a minimum, objective requirements identified in the TRD and viewed, generally, as services. In addition, the capability should be considered to address Transformational Communications requirements which are now in a formative stage.
TRD	3.2.1.2.5.1.d	68	Can a temperature/time profile be provided for the 60 days for the backup power source? Can the backup supply be externally recharged/replaced during this period?	Recommend that the design process regard GEMS as employable in worldwide environments 365 days per year with 24/7 operation. The backup cannot be "recharged/replaced during this period." 3.2.1.2.5.1.g explicitly states that the "GEMS shall include the capability to operate the klaxon alerting system from backup power only, without recharge, and test-cycling once per day for a period of up to 60 days". The intent of 3.2.1.2.5.1.f is to include recharge during normal operation and to be capable of operation for 60 days in the event power is lost.
TRD	3.2.1.2.5.1.q	70	Who will be defining the klaxon locations, the user, the GEMS contractor, or both?	Anticipate that locations will result from a collaboration between User and Contractor. User input will identify required/preferred areas; Contractor input will accommodate electrical/mechanical limitations of environment.
TRD	3.2.1.2.5.1.q	71	Please define the meaning of "within acoustic range". Is there a numerical Sound Pressure Level (SPL) planned for "within acoustic range"? The wording ".. none of which is within acoustic range of another.", could be interpreted to mean that there must be areas that are not acoustically covered by the klaxon, is that the intent?	The intent is that none of the areas overlap.
TRD	3.2.1.2.5.2.f	74	Can the charging activity be assumed to be performed indoors?	Developing GEMS such that the charging is always done in a non-fallout environment is acceptable, but not required.
TRD	3.2.1.2.5.2.f	73	Can a temperature/time profile be provided for the 72 hours of operation for the pager battery?	Characteristics of the pager battery are envisaged as being part of the GEMS design. Recommend that the design process regard GEMS as employable in worldwide environments 365 days per year with 24/7 operation.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.2.5.2.g	75	OTA frequency change requires two-way comms to avoid the "split-wing" problem, is this an intent of this requirement?	OTA frequency change is an objective requirement. The intent is to provide greater flexibility for GEMS system configuration. Receive-only operation continues to be a requirement for operational paging.
TRD	3.2.1.2.a	156	This question references the functions defined under the "OBJECTIVE" requirements, in which communications modality is desired. Is this to be done through comm being integrated into the edge services mentioned in the ORD? This could be accomplished via terrestrial link WAN or via SATCOM.	Providing the objective capabilities such as video conferencing or access to SIPRNET is a matter of implementing, within GEMS, the means to support the functionality. The manner by which this is accomplished is a Contractor design prerogative.
TRD	3.2.1.2.h	181	Is UHF text messaging of EAMs also required? It is not excluded from the requirements of the UHF's to be capable of text messaging.	The intent of the requirement is that, presented an EAM in PLSO format, the UHF radio support its transmission. See, also, subpar 3.2.1.2.3.1.i.
TRD	3.2.1.2.k	158	Please clarify what "employment of encryption equipment shall be supported by communications function where required"?	GEMS' communication function will provide necessary interface signals, timing, etc to allow proper operation of employed encryption equipment.
TRD	3.2.1.4 (e)	292	GEMS shall only employ Government approved Type 1 cryptographic equipment Modified to provide a verifiable requirement.	See TRD Update para 3.2.1.4.a
TRD	3.2.1.4(h)	293	Cryptographic equipment selection and the implementation of security functions shall support electronic fill. Fill shall be accomplished IAW DS-101 or standard selected for the Key Management Infrastructure (KMI) Capability, Increment 2 (CI-2). Key Management Infrastructure must be in place for Increment 1 to support the mandated Cryptographic types specified in the TRD. Please clarify. Key Management Infrastructure must be in place for Increment 1 to support the mandated Cryptographic types specified in the TRD. Please clarify.	The Key Management Infrastructure (KMI) Capability Increment 2 (CI-2) is what future cryptographic devices will be built to. KMI CI-2 is supposed to support legacy and future fill interfaces.
TRD	3.2.1.4(l)	294	Clarification required for radio Equipments role in 'Mechanical Destruction'.	The means for accomplishing destruction is anticipated to be related to the GEMS system architecture and is expected to be part of the design.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.4(i)	295	Means shall be provided for mechanical and/or electrical emergency destruction of encryption equipment, data storage media, keys, and system data such that any equipment item, even if subsequently reassembled, is unable to function in supporting the extraction of algorithms, keys, and data. Mechanical destruction means shall be provided for each GEMS equipment group separated by more than 50 feet. Electrical erasure means shall be provided for each LRU capable of retaining classified data . Please verify that erasure of classified data applies to any type of storage media. Note: Flash media is the predominant storage media and battery backed solid state random access media are also available " thus the suggested change. Please clarify "separated by more than 50 feet." i.e. separated from what???	GEMS' design is anticipated to be implemented such that clusters of equipment result. Each cluster separated from another by more than 50 feet is required to be able to support mechanical destruction. See TRD Update.
TRD	3.2.1.4.1(a)	296	GEMS shall employ embedded and external COMSEC/TRANSEC devices as defined herein for the media that ensures interoperability with the connected agency.	The intent of the requirement is to provide flexibility in the design to allow specification of encryption so long as the device supports interoperability. The suggested text would restrict such flexibility. No change required.
TRD	3.2.1.4.1(b)	297	GEMS shall be capable of supporting operation with the devices defined section d - p in the following simultaneously for the service/port configurations defined herein. GEMS shall be capable of employing the cryptographic devices identified in simplex, half duplex, and full duplex operations as supported by each cryptographic device/function.	The devices identified in d - p are those with which GEMS must interoperate. Integration into the GEMS design is not a requirement. No change required.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.4.1(d-p)	299	<p>At a minimum, GEMS shall be fully compatible with the following devices when employed by the entity connected to GEMS in the modes as identified herein, i.e. the applicable specifications and ICDs.</p> <p>d. Reserved</p> <p>e. KG-84A IAW NSA 82-2B</p> <p>f. KG-84C IAW NSA NSA 85-2</p> <p>g. KIV-7HSB IAW 4090501-0201</p> <p>h.KIV-19 IAW 36024531</p> <p>i. KG-194/A IAW NSA 89-14</p> <p>j. KYV-5/ANDVT IAW TT-A3-4221-0089</p> <p>k. KY-58 IAW CSESD-14F</p> <p>l. KY-68 IAW TT-A3-7005-0040A</p> <p>m. KY-99A IAW CSESD 71A</p> <p>n. KY-100 IAW CSESD 70A</p> <p>o. STE IAW FNBDT 210 and FNBDT 230</p> <p>p. TACLANE/FASTLANE IAW TL-025-01/FL3-004-01</p> <p>KGv-11A is deleted because the unit is integrated into a host and the GEMS would therefore interface to the host not the KGv-11A. Note: all the devices referenced use obsolete cryptographic algorithms except STE, TACLANE and FASTLANE.</p>	Requirement is for interoperation with KGv-11A vice incorporation. No change required.
TRD	3.2.1.4.1(u-y)	300	<p>u. Cryptographic devices required for Milstar 1 IAW SI-1135</p> <p>v. Cryptographic devices required for Milstar 2 IAW SI-2035</p> <p>w. Cryptographic devices required for AEHF IAW SI-3135</p> <p>x. Cryptographic devices required for Advanced Polar satellites IAW (TBD)</p> <p>y. Cryptographic devices required for UHF Follow-On/EHF satellites IAW PMW-146</p>	See TRD Update.
TRD	3.2.1.4.1.c	298	<p>For those systems connected to GEMS using separate encryption devices, GEMS shall provide interfaces compatible with the devices identified in d - p to ensure interoperability between GEMS and connected systems.</p> <p>Connected systems are interpreted to mean those systems connected via the various media, VLF/LF, HF, UHF, EHF/AEHF, landline. List of cryptographic equipment to be supported is provided. Clarification requested as to whether that equipment is connected at operator interface, or at direct port into radio subsystem equipment.</p>	Encryption devices employed by GEMS are design choice (see subpars a-c) so long as the device is NSA-approved for GEMS use; encryption devices employed by connected-to agencies and with which GEMS must be interoperable are identified in subpars d-p. No change required.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.4.1.d through p	77	Please clarify the requirement for "GEMS shall be fully compatible with the following devices..." What is the meaning of the phrase "entity connected to GEMS"?	An "entity connected to GEMS" is any agency with which GEMS operates. Interoperation with that agency must be possible when the agency employs any of the encryption devices listed in subpara d through p. One example would be GEMS interoperation with another agency which employs KG-84 encryption.
TRD	3.2.1.4.1.t	169	Should Para 3.2.1.4.1.also cover the KGV-136?	See TRD Update.
TRD	3.2.1.4.2	168	Can the Government provide guidance on what devices will be embedded and what the OPCON for RED key fill will be? Also, does embedded crypto equipment include any selected crypto that is part of GEMS, or only those crypto capabilities contained as part of the radios? Are all GEMS cryptos implied here, or just those as part of the radios?	The devices that will be employed should be based on the design approach. Red fill will be required for most/all of the legacy devices. Use of a single key fill interface for all legacy DS-102 devices is open. The intent was to provide the most comprehensive list of encryption equipment that supported interfaces with entities connected to GEMS.
TRD	3.2.1.4.2(b)	301	Delete Requirement Zeroization of the VLF/LF subsystem should be treated generically as defined in the previous requirement. The requirement as stated presupposes an implementation restricting the developer options for VLF/LF implementation.	See TRD Update.
TRD	3.2.1.4.3	302	As appropriate to the integrated encryption device, key fill and key loading shall be performed at the operator station and/or encryption device interface as specified in Section 3.2.1.5.5 herein. Make change as shown.	Requirement is to be performed at operator interface. No change required.
TRD	3.2.1.4.a & d	76	Please clarify the difference between the requirements in these two sub-sections (a) & (d).	See TRD Update.
TRD	3.2.1.4.h	167	Are devices listed under 3.2.1.4.1 (COMSEC and TRANSEC) DS-101 compatible ?	See TRD Update.
TRD	3.2.1.5.1.d	81	What prompts can be disabled? Could you provide examples of prompts that the user could disable?	See TRD Update.
TRD	3.2.1.5.1.l	82	What is the meaning of 'proper units'?	By way of illustration, for length in feet, providing the unit designation, "feet" or "ft."

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.5.1.l, m, & n	83	Is there one display per physical screen/monitor, or will a screen/monitor support multiple displays (Windows-like) running different roles? It appears as though there will be different roles for the GEMS operators. Other than a potential System Administrator and Maintenance Tech (3.2.1.5.2.f), what other types of GEMS operators will require unique displays?	The intent is that one screen/monitor support multiple displays. See updated TRD, paragraph 3.2.1.5.2.f.
TRD	3.2.1.5.1.m	185	This "operator interface and display function" is unclear. What users are referenced (is this the operator), and what roles are referenced? Also, at what security level are these roles implied?	Yes. The "user" here is the operator. GEMS is intended to support control from a single position. Mission operations may require use of more than one position at the same time. Operations/Maintenance can be performed from any position but must be supported by appropriate screens/displays/views. The system must be capable of handling classified data to the level specified.
TRD	3.2.1.5.1.p	84	The first part of this shall statement defines requirements against the monitor, while the "capability for operator selection of display colors" is typically controlled by the workstation. Should it be two separate requirements? Req 1: A color display consisting of a minimum of one 19", as measured on the diagonal Req 2: Should be in the CDPS Section (3.2.1.5) as follows: The CDPS shall have the capability for operator selection of display colors.	While control can be exercised by an operator, the display must be capable of being controlled. The design approach is contractor prerogative. Also see updated TRD.
TRD	3.2.1.5.1.q	85	How are 'features or characteristics which annoy, strain or fatigue the operator' determined? The first part of this statement "Displays presented absent of any features or characteristics which annoy, strain, or fatigue the operator, such as flickering or fluttering under any condition; distracting grainy or wavy patterns" are all attributes of the display while "colors which are not easily distinguishable" are controlled by software on the workstation. Should these be two separate requirements?	The question suggests a design/architecture whereas the requirement is written to specify what is viewed by the operator. Software controlling color presentation will run on a processor sited in a location selected as a design prerogative which could be other than a workstation.
TRD	3.2.1.5.2	206	Can any documentation related to GEMS specific utilization and interfacing via "beam management protocol" be provided?	The documents that mention beam management protocols are SR-2300 (LDR) and SR-3300 (AEHF).

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.5.2	223	Current: y. For EHF, GEMS shall be capable of accepting and acting upon received Milstar data parameters .. FEP data parameters generated by the FCST and the AEHF CDS.. Recommended: y. For EHF, GEMS shall be capable of accepting and acting upon received Milstar data parameters .. and the AEHF CDS. The FEP satellites will be near the end of their Operational Life at the time of GEMS initial fielding. Also, the constellations identified to be supported in the TRD and the GEMS ORD does not include FEP (i.e. items "n" & "s" of this same list on page 47). XXXX recognizes that this requirement is also in the latest draft ORD (v 8.2) and perhaps the comment should be applied to that document.	See Updated TRD.
TRD	3.2.1.5.2(j)	303	Compliance with the four levels of zeroization defined for ACTS equipment IAW (TBD) A review of the VPC ICD does not define four levels of zeroization. Please clarify.	ACTS equipment does not define four levels of zeroization but does support them. The four levels consist of: No keys loaded - total zeroize, end of mission zeroize - remove all TEKs and most KEKs (keep FIREFLY keys), selective zeroize -delete keys no longer needed or past the end of crypto period, and power down zeroize - remove all unencrypted keys within the ACTS device. See Updated TRD.
TRD	3.2.1.5.2(p)	304	The capability to accept OTADD IAW JTSS, SR-3300. SR-3300 defines the processing to be performed by a member terminal to receive OTADD. The GEMS is not specified to connect to the Mission Planning Element real time interface therefore the GEMS is a member terminal for OTADD.	See Updated TRD.
TRD	3.2.1.5.2(q)	305	The capability to receive and process the AEHF Common Data Sets (CDSs) defined in SI-3145, Vol. 2. SI-3145 defines the data sets but does not define the processing a terminal must perform.	See Updated TRD.
TRD	3.2.1.5.2(s)	307	The capability to automatically acquire a satellite, join and participate in preplanned networks IAW PMW-146 for UFO-E/EE, IAW SI-1135, SI-2035 for EHF, SI-3135 for AEHF, and IAW TBD for Advanced Polar EHF.	See Updated TRD.
TRD	3.2.1.5.2(w)	308	The capability to support beam management member protocols IAW SR-2300, SR-3300 on all networks simultaneously.	See Updated TRD.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.5.2(y)	309	GEMS shall be capable of accepting and acting upon terminal image(s) consisting of CDSs generated by the MPE for Milstar, AEHF, UFO-E/EE satellites. The MPE replaces the other planning tools. FCST is deleted because GEMS does not support operation over FEP as is also the case for the other AEHF Terminals under development.	See Updated TRD.
TRD	3.2.1.5.2.a	86	Should "all" capabilities be able to be disabled? What are the functions that may affect mission operations?	See updated TRD.
TRD	3.2.1.5.2.a & c	87	Could you provide the list of 'functions that affect mission operations' that the user may need to disable?	Definition of the functions is part of the design process will involve User participation..
TRD	3.2.1.5.2.d	88	Does this include the klaxons?	Klaxons are included.
TRD	3.2.1.5.2.f	89	What are all the roles that will be needed in the system? Which capabilities need to be allocated to each role? Do capabilities overlap for the various roles?	Four roles have been identified in paragraph 3.2.1.5.2.f. Associated capabilities are anticipated to be part of the design process.
TRD	3.2.1.5.2.r	306	The capability to receive and process the CDS when received OTA from other AEHF terminals. Milstar terminals do not support distribution of CDSs. This is accomplished only AEHF Terminals when supporting the XDR Mode.	See Updated TRD.
TRD	3.2.1.5.2n	192	Transitioning across networks via login-logout is discussed. If the GEMS "Networking" capability implies passing traffic across networks via the CDPS, should the "transitioning" requirements also imply a capability for an OIU to perform Monitoring and Control of multiple networks concurrently? For example, is a capability to "log in" to N number of GEMS network terminals (each logged on to a particular satellite network) from a consolidated location a requirement?	The intent of the requirement is to support, at a single GEMS site, the transition from one satellite to another. The answer to the last question is, no.
TRD	3.2.1.5.3.c	90	Does the expression "equipment items reused by GEMS" in the last sentence mean legacy equipment?	Yes
TRD	3.2.1.5.3.s	91	Shouldn't this requirement be in section 3.2.1.2.5 Aircrew Alerting?	It could but this requirement relates the support provided by the communications function.
TRD	3.2.1.5.4(a)	310	The capability to transfer data, including the Common Data Set (CDS), via removable media and an external device at operator command.	Subpars a, b result in bi-directional data transfer. Recommended change imposed requirement on the removable media and changes intent. No change required.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.5.4.a	92	Can you provide a list of data that is required to be on the removable media? What is meant by 'an external device' for data transfer? Is it different than the removable media?	<p>The list of items to be stored is expected to be part of the design process. In general, all messages have to be stored; voice traffic related to mission operations probably has to be stored; and incidental communications (comm. checks, maintenance traffic) does not have to be stored. It is reasonable to store everything on temporary system files then periodically offload onto permanent storage/archive.</p> <p>The external device is anticipated to be different than the removable media. Assuming the system security architecture supports it, one possibility is a laptop.</p>
TRD	3.2.1.5.4.b	93	What is meant by an 'external source' to accept upgrades?	<p>One possibility is a laptop. Note, however, that a security issue may exist if the same port is used to connect GEMS to a laptop supporting maintenance or to a laptop with classified mission parameters. This may not be the case, presuming a proper security architecture is provided, if a separate port is used. See also TRD update.</p>
TRD	3.2.1.5.4.e	94	What does it mean to record 'all switch actions, voice communications, and message traffic'? How much data can this be? Does this mean all operator keystrokes? What voice communications need to be recorded? Conversations between crewmembers? Voice traffic transmitted into or out of a GEMS site? Can you elaborate on the purpose for recording these communications? Do these recorded communications need to be archived to removable media?	<p>At a minimum, switch actions would be recorded to allow recreation of a mission. The approach for this, including the level of detail is anticipated to be part of the design.</p> <p>All voice traffic, including PLSO, into or out of GEMS would be recorded</p> <p>Purpose is to perform mission archiving.</p> <p>Yes. Recorded communications need to be archived to removable media</p>
TRD	3.2.1.5.4c	191	Networking of workstation/terminals/OIUs is discussed. Will these networked interfaces operate as a single site/workgroup for a GEMS installation that is logged into one satellite network at a time? Or will the GEMS need to (either through multiple installations or inherent interfacing capabilities) operate from the same location with multiple "heads" concurrently functioning on different networks with communications/message routing between networks via the "networked" terminals?	<p>Local operators are networked together. The CDPS and satellite terminals support simultaneous operation on up to four networks via one satellite. Intra-team collaborative operations with other GEMS sites is not required.</p>

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.5.4e, 3.2.1.5.5j, and 3.2.1.5.6	193	Is a consolidated format required for this data and does it need to store to the same removal media device (e.g. Text Files/Logs, Digital Audio Tape, CDR, etc.)? Also, what reconstruction or review/query capabilities are foreseen as operationally desired for this data once stored? Or is this simply a requirement to provide storage to "queue" traffic in the event of downtime or traffic backlogs?	Formats for storage and the method(s) of retrieval/presentation are prerogatives of the design. Note that the archival functionality required in 3.2.1.5.6.e, f, g differs from temporary storage suggested by "in the event of downtime."
TRD	3.2.1.5.5(b,c,d,e)	311	Specifies separation between CDPS and Baseband interfaces to radio subsystems. This mandates the physical partitioning of equipment, disallowing packaging optimization (potential co-location of CDPS and Radio Equipment) for site installation Propose deletion of requirements, while maintaining existing Operator-to-CDPS and Antenna Separation requirements.	Separations reflect user requirements. No change indicated.
TRD	3.2.1.5.5(e)	313	The baseband interfaces with EHF subsystem when separated from the CDPS up to 500 feet with an objective of 1500 feet. The requirements as defined constrain the developer ability to define and implement reliable cost effective interfaces between the operator interface and the EHF subsystem. As defined is a major driver for cost and weight of cables required for interconnect and severely impacting the ability of achieving a 1500 foot separation distance.	The requirements represent user needs.
TRD	3.2.1.5.5(E)1-7	312	Direct specification of interfaces to radio equipment prevents optimization of interfaces to provide best technical solution to meet system requirements. Propose deletion of these requirements.	Requirement(s) reflect user need.
TRD	3.2.1.5.5(f)	315	Specifies separation between operator interface and CDPS not illustrated in Figure 3.1.	See updated TRD.
TRD	3.2.1.5.5(g)	314	The ability to support a common fill interface for red and black keys may be in conflict with security requirements. Assumptions are: Black Keys may be filled via host interface(s), KG-30X will support Red, Benign and Black Key Fill. Note: Not all embeddable Type 1 Cryptographic devices support loading Black Keys via common Red/Black Fill interface. Requirements as stated need further analysis and modification.	DS-101 is designed for busing application.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.5.5(q)	316	<p>A GEMS PC/windows-based transfer device with the following attributes: (1)The capability to receive satellite network parameters, keys, and ephemeris data IAW formats specified in SI-1135, SI-2035, SI-3135, and PMW-146 and for Milstar LDR, Milstar MDR, AEHF and UFO-E/EE, respectively, to support the designated satellite constellations received from the GSSC Strategic TDN for subsequent uploading into the GEMS</p> <p>Please clarify if the GEMS is to receive EHF Planning info from the AEHF MPE or the GSSC Strategic TDN. Please also clarify if the GSSC Strategic TDN is GFE.</p>	See updated TRD.
TRD	3.2.1.5.5(v)	317	<p>The AEHF subsystem to provide data flow control including TOD, cryptographic keys and CDS in a manner consistent with the E4B, E6B, B2, B52, RC-135, MCCC, SMART-T, SCAMP, and NESP platforms.</p> <p>Please clarify the purpose of statement. It is not clear how it applies to the development and operation of the GEMS EHF Subsystem.</p>	"Flow control" refers to maintaining appropriate data and parameters such that communications with the platforms can be accomplished without significant manual intervention. See also TRD update.
TRD	3.2.1.5.5.e	95	<p>Is there a reason for constraining GEMS by specifying the type and quantity of (GEMS internal) electrical interfaces for AEHF?</p> <p>Would it make more sense to specify the number of services required and their respective ranges of data rates and allowing industry to determine the best interface solution to meet these needs?</p> <p>Can you explain why these interfaces must be IAW MIL-STD-188.114?</p>	<p>The number of RED/BLACK interfaces is consistent with the needs identified for GEMS.</p> <p>The intent of using MIL-STD-114 is to employ a standard interface for digital data.</p>
TRD	3.2.1.5.5.f	96	<p>Why would you see the 'operator interface', assumed to be the keyboard and display, separated from the CDPS? Would this be for fixed sites only?</p>	To support flexibility in equipment placement.
TRD	3.2.1.5.5.g	186	Are all GEMS cryptos implied here, or just those as part of the radios?	All embedded cryptos are implied.
TRD	3.2.1.5.5.j	97	Should 'Write-Once Read-Only' be 'Write-Once Read-Many' (WORM)?	See updated TRD.
TRD	3.2.1.5.5.l	98	What is the purpose of 'interconnection of operators'?	Interconnection is intended to support operator interaction.
TRD	3.2.1.5.5.n	99	DTMF is not in Acronym list.	See updated TRD.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.5.6	224	Current: k. For EHF operations, the storage capability shall have the capacity to store a minimum of five unique system data sets (images) and TRANSEC keys with an objective of ten. Recommended: k. For EHF operations, the storage capability shall have the capacity to store a minimum of five unique system data sets (images), COMSEC and TRANSEC keys (Black form) with an objective of ten. GEMS should be required to store KGV-11/ACTS compatible Black COMSEC keys in addition to TRANSEC. Adding Black key form is for clarification, storage of Red keys via the types of media identified in this section is generally not permitted.	Storing COMSEC keys within the terminal would have the effect of limiting EHF/AEHF terminals to those with embedded COMSEC. This is an undesirable design limitation; the option of being able to design with either configuration is desired. No change is required.
TRD	3.2.1.5.6(k)	318	For EHF operations, the storage capability shall have the capacity to store a minimum of five unique system data sets (images) and TRANSEC keys with an objective of ten. Please clarify the need for 5 and even up to 10 Terminal Images. The AEHF MPE currently only provides for planning up to five Terminal Images for any AEHF Terminals currently in development.	The requirement represents user need.
TRD	3.2.1.5.6.d	102	Should 'Write-Once Read-Only' be 'Write-Once Read-Many' (WORM)?	See updated TRD.
TRD	3.2.1.5.6.e	103	Does log data have to be written to the removable storage in real time or is this more of an archival function?	This is a design prerogative.
TRD	3.2.1.5.6.h	105	What is an 'archive log'? Is this the log data stored internally?	"Archive" log data is data stored on the removable media.
TRD	3.2.1.5.6.i	106	Why are 'suppressed EAMs' specifically referenced? Are they different than other messages?	To ensure that a record is retained of the received EAM regardless of whether it is displayed.
TRD	3.2.1.5.6.j	187	Are all GEMS cryptos implied here, or just those as part of the radios?	All embedded cryptos are implied.
TRD	3.2.1.5.6.j	188	Can we assume EAM's and Non "EAM's (3.2.1.5.7.2) are unclassified? If so, what data above unclassified EAMs could be contained here? Also, other than EAM's and Non-EAMs (3.2.1.5.7.2) , are any other messages referenced here?	The assumption is incorrect.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.5.7	319	GEMS shall process and manage EAMs and other narrative messages as specified in Tables 3.2.1-1 and 3.2.1-2. The last two entries in Tables 3.2.1-1 and 3.2.1-2 need to be clarified. It is unclear what requirements are being levied. Recommend the last two entries be deleted as the AEHF Subsystem is required to implement the applicable processing to support the various messages. GEMS EHF Subsystems have no requirement for Telemetry, Tracking and control. This is unique to a few specific AFCPTR Terminals that interface with an ASMCS.	See updated TRD.
TRD	3.2.1.5.7.2.j	108	Suggest deleting the word "output" from the sentence.	See updated TRD.
TRD	3.2.1.5.7.3.c	109	Is the 'subsequent piecing' actually 'subsequent manual piecing'?	After the CDPS complies with EAP-CJCS, Volume I and DoD S5200.16 as stated in 3.2.1.5.7.3.a, the retention of messages referred to is to support subsequent manual piecing.
TRD	3.2.1.5.7.7	111	EAM Relay Will EAMs ever be relayed in data (text) format? Does the phrase "PLSO read-out" infer voice?	Yes. PLSO read-out " implies voice but subsequent manual read-out by an operator is not precluded.
TRD	3.2.1.5.7.7	189	Is this a mechanical read-out capability, or is it procedural (human)?	The intent of this requirement is that approval is granted by an operator for the complete retransmission of the EAM in PLSO format by the CDPS/UHF radio. This does not preclude the operator's read-out of the message.
TRD	3.2.1.5.7.8.e	112	What are 'variable fields' that need to be identified?	Those message fields where adjustment and manipulation by an operator is permitted.
TRD	3.2.1.5.7.b	107	What are the different message precedence's?	See EAP Vol VII.
TRD	3.2.1.5.b	78	Are the headsets to be controllable from all operator interfaces? Is there a reason that "removable message and data recording capability" and "two operator headsets" are in the same requirement? Should it be two requirements? b1. The CDPS shall also include a removable message and data recording capability b2. The CDPS shall be capable of interfacing up to two operator headsets.	Implementation of headset control is a design prerogative. No change required.
TRD	3.2.1.5.c	79	What is the intent of potentially more than 2 operators?	The number of positions needed to support fixed and deployed operations may be greater than two.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.1.5.d	80	What is the definition of 'sufficient extensibility' for additional upgrades?	See updated TRD.
TRD	3.2.1.6.f	113	Can this requirement be further defined?	Higher priority jobs are printed before lower priority jobs. Higher priority jobs can interrupt ongoing lower priority jobs. Lower priority jobs interrupted for any reason will eventually be printed.
TRD	3.2.1.7	320	General Comment Recommend that the developer be given the design latitude to meet the GEMS performance requirements without specifying implementation.	See updated TRD.
TRD	3.2.1.7(d)	322	"...or from a portable time reference other than GPS." Please clarify if "other equipment" is GFE or CFE. If GFE please specify the GFE for purposes of interface definition etc. If CFE will this be a directed equipment purchase for delivery?	See updated TRD. Anticipate that the time reference would be identified as part of the design process.
TRD	3.2.1.7(i)	323	The capability shall be provided to determine, report, and employ where needed in GEMS, at the lower of the two levels of resolution, the relative difference in time between GPS and internal time. Please clarify the need and purpose of this requirement. Propose it be deleted to allow the developer to determine if such a capability is needed to meet GEMS performance requirements.	Intent is to provide operator with diagnostic tool to identify substantial differences between time sources and employ information to support decision to use one source or another.
TRD	3.2.1.7.c	321	Recommend that the developer be given the design latitude to determine the accuracy of the internal time reference needed to achieve successful EHF satellite communications system acquisition/log-on within the time given in paragraph 3.2.1.2.4.1 item I. Recommend the Government provide any other related requirements, such as time from warm start to acquisition/log-on, which may be applicable.	See updated TRD. Regarding "warm" start, GEMS has no specific requirement for warm start. See related question regarding cold start (3.2.1.2.4.1.i)
TRD	3.2.1.8.a	115	This requirement should be quantified. Are the quantifications found in paragraphs 3.2.1.8.b, c and d?	Subpar a is a general requirement on implementation of growth to include provisions in subpars b, c, and d. Any provision for growth included in the GEMS design, when implemented, must be IAW subpar a.
TRD	3.2.1.8.b	116	Is the 1 kW for HF output power or radiated power?	For purposes of estimation, output power can be assumed.
TRD	3.2.2.1.2.a	171	Please clarify, lift to what height per MIL-STD-1472?	A 5 foot lift will accommodate pallets and allow use of transport vehicles with higher load beds.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.2.1.3(d,i)	329	Addition of backup primary source and switchover function will add significant design complexity and cost. Propose deletion of requirements.	The requirement is for access and use of a backup primary source vice provision of a backup primary source.
TRD	3.2.2.1.3.c	120	What is the source/intent of this requirement? Are all GEMS subassemblies to be able to operate at 28 VDC or just the systems specifically identified in the TRD? Shouldn't it be sufficient to take in the three prime power types and distribute the necessary power (e.g. 120 VAC) to all GEMS subassemblies?	28 VDC is a standard voltage source employed by equipment such as radios and encryption equipment. The intent of the requirement is to make available power for such equipment if employed. The requirement is for making available a power source vice developing equipment to use it. Not necessarily. See above.
TRD	3.2.2.1.3.n	121	Is the "backup prime power" source government or contractor provided?	"Backup" prime power will not be part of the GEMS equipment set.
TRD	3.2.2.1.3.p	122	Is it possible to have more then one "prime power master switch" (one per equipment cluster as defined by remoting requirements)? Is the intension to have one prime power entry point for GEMS and distribute GEMS system power between the clusters of GEMS transit cases? If yes, this could be 3550 feet of power cable just to meet the threshold power distribution needs of GEMS as defined (remoting requirements).	The intent is to have a single entry point for GEMS power.
TRD	3.2.2.1.5.a	128	Ionospheric detonation, which produces HEMP, also (depending on link geometry) affects phase and amplitude, of received signals vs. time (p 5-7,DNA 3499 H). Will guidance be provided (VLF/LF), especially wrt phase tumbling? This could impact the receiver design.	The question suggests operation during HEMP event. See paragraph 3.2.2.4.
TRD	3.2.2.2(p)	331	Is this only applicable to "newly developed and modified GEMS components?"	The intent is that GEMS equipment, while in storage, does not incur damage due to HEMP event.
TRD	3.2.2.2.(j)	330	When in a zeroized configuration, GEMS shall be transportable via normal Traffic Management Office freight channels. Please clarify that the CRK required for operation is required to be separated and sent via defense courier services. Please also clarify that the GEMS in a Mission Zeroized state, i.e. VPC and KG-30X with initialization keys and embedded in the GEMS can be transported as other than CCI or that CCI equipment may be shipped via normal Traffic Management Office freight channels.	Noted. Cryptographic Ignition Keys (CIKs) and Cryptographic Recovery Keys (CRKs) used in GEMS equipment must be handled in accordance with NSA approved doctrine.

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TRD	3.2.2.2.m & 3.3.1.i	124	<p>As stated, the threshold and objective requirements can be interpreted as being independent of each other. If the objective requirement is met, is the need to provide a connection to a source of heating and cooling still necessary?</p> <p>In this paragraph and in paragraph 3.3.1.i, there is reference to a source of conditioned air being available for the transit cases. Is this source government or contractor provided?</p> <p>If this is government provided, can details be provided on the capacity (heating, cooling, and air pressure), connection mechanism, range of operation, etc?</p> <p>Will this capability be available for all remoted clusters of equipment?</p> <p>Will this capability be provided at all sites, at all times?</p> <p>If yes, this impacts the transit case design only</p> <p>If no, this impacts the equipment selection</p>	See updated TRD.
TRD	3.2.2.2.p	125	What is meant by "modified GEMS"?	The requirement is intended to guarantee that, while in storage, GEMS equipment will be undamaged by HEMP.
TRD	3.2.2.3(4)	332	Need to define a realistic, acceptable degree of leakage	See updated TRD.
TRD	3.2.2.5 General Comments	337	This program carries a rigorous Nuclear S/V requirement. It is not amenable to system segments procured as commercial off-the-shelf (COTS) LRU's or modules without corresponding nuclear hardness analysis and/or test and methods of demonstrated procurement repeatability.	True.
TRD	3.2.2.5 General Comments	338	Equipment that is collocated with human operators or personnel can be hardened to survive nuclear environments consistent with human survival through the usage of commercially available full temperature electronic components. Equipment that is located outside of human survival venues cannot be qualified to survive within program requirements unless exact nuclear levels are provided with correlation to those venues.	The temperature and nuclear survivability requirements are separate issues. The exact fallout levels are explicitly given by reference in this TRD ("GEMS shall meet all performance criteria after exposure to the total ionizing dose threat from fallout of CJCSI 6811.01A, Appendix L to Enclosure A."). HEMP can be done by packaging/repackaging.
TRD	3.2.2.5 General Comments	339	Any crypto related components and configuration items that must be procured in accordance to NSA guidelines cannot be ensured to survive to nuclear levels greater than the restricted technology will allow. This also applies to any GFE or directed use equipment.	Crypto equipment that is co-located with people does not have fallout requirements. Crypto equipment located outside with the antenna would have to survive fallout. HEMP can be met with packaging. There is no GFE or directed use equipment at this time.
TRD	3.2.2.5.1.h	129	Where are the "existing ground mobile command post terminal sub-system SCINTILLATION/HEMP capabilities" documented?	HEMP requirements are detailed separately. Scintillation requirements are in SR-3000

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.2.2.6	228	Current: e. Teardown times". and all klaxons".. Recommended: klaxons, excluding transit time".. Same as comments for the setup time. Time required to travel to the remoted Klaxons is beyond the control of the contractor.	See updated TRD.
TRD	3.2.2.6	227	Current: c. Setup time".... and a minimum of two klaxons".. Recommended: c. Setup time..." and a minimum of two klaxons, excluding transit time".. The time required to drive the 5-10 (or more) miles from the Base Station to the remote Klaxon locations is beyond the control of the contractor. Conditions such as on-base populated areas, residential areas, school zones, as well as road conditions, etc could significantly impact the overall transit duration.	See updated TRD.
TRD	3.2.2.6	226	Current: a. In the pre-nuclear environment, transportable GEMS setup/teardown times, to include antennas, shall take no more than two hours. Recommended: a. In the pre-nuclear environment, transportable GEMS setup/teardown times, to include antennas, shall take no more than two hours (without MOPP IV gear). In the pre-nuclear environment, transportable GEMS setup/teardown times, to include antennas, shall take no more than TBD hours (in MOPP IV gear). Item c eliminates all requirements for trans- and post-attack setup/teardown times with personnel in MOPP IV gear, but no mention of pre-attack but in MOPP IV gear. At this time, separate peacetime requirements are suggested. XXXX recognizes that this requirement is also in the latest draft ORD (v 8.2) and perhaps the comment should be applied to that document.	See updated TRD.
TRD	3.3.1.k	130	Requiring a fault indicator on each subassembly may eliminate the use of some COTS products. An alternative approach might be to require the identification of all faulted subassemblies on the operator display. What is the intent of this requirement?	The intent is to know that power has been applied to the LRU and whether the unit has failed. See updated TRD.
TRD	3.3.11.1.a	134	The following words may want to be added "...to the extent controlled by MIL-STD-461."	The design and test processes must demonstrate that GEMS can operate without adversely affecting operation of collocated equipment and without its own operation being adversely affected by collocated equipment. No change required.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.3.11.1.b	135	The following words may want to be added "...to the extent controlled by MIL-STD-461."	The design and test processes must demonstrate that GEMS can operate without adversely affecting operation of collocated equipment and without its own operation being adversely affected by collocated equipment. No change required.
TRD	3.3.11.2.a and 4.2.14	351	Ref: "3.3.11.2.a. GEMS shall meet the TEMPEST requirements specified in the Unified Infosec Criteria (UIC) for GEMS." "4.2.14. EMSEC. The EMSEC/TEMPEST requirements shall be verified in accordance with the UIC at a certified facility" Do you know when the UIC requirements for GEMS will be available? Clarifying sentence: The UIC requirement we need is the new NONSTOP document, CNSSAM TEMPEST 01-02, which replaces NACSEM-5112.	The Specific GEMS UIC cannot be provided by NSA until a preliminary system architecture/design is available. A preliminary GEMS architecture/design is a product of the GEMS study phase. When available, NSA will be requested to prepare the UIC for GEMS.
TRD	3.3.11.2.b	136	The environment and location are not specified; please provide this information.	The system description indicates that GEMS is intended for use at bomber, tanker, and command post installations. In its transportable configuration, GEMS will accompany teams from these installations during deployments. Locations of the deployment sites can be considered to be worldwide.
TRD	3.3.3.a	343	Need to define a realistic, acceptable degree of leakage.	See updated TRD.
TRD	3.3.3.a	131	Should "without caps" be changed to "with caps"?	"Without caps" is the intent.
TRD	3.3.3.g & h	132	Are these two requirements for fixed and transportable or transportable sites only?	The resultant GEMS attribute may have more utility for transportable sites but is applicable to both.
TRD	3.3.7(b)	344	It is not possible to "eliminate" Category I and II hazards from an AC powered system. Wording should be changed to allow control of hazards to MIL-STD-882 acceptable levels. Please define what is acceptable.	See updated TRD.
TRD	3.3.7.1(d)	345	Does the setup time include installation of the safety grounding system?	Yes.
TRD	3.3.7.2.a	133	Please explain the intent of this requirement and the method by which GEMS equipment conformance will be measured.	The requirement has been deleted.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	3.3.8.a	346	Change "shall" to "should" or change "GEMS shall be designed in accordance with MIL-STD-1472 to achieve safe, reliable and effective performance by operator personnel and to minimize personnel skill requirements and training time" to "GEMS shall be designed in accordance with MIL-STD-1472 as guidance to achieve safe, reliable and effective performance by operator personnel and to minimize personnel skill requirements and training time". Optimization of GEMS System size/weight/connector access requirements would be limited if 100% compliance of MIL-STD-1472 with MOPP IV gear is required.	No change required.
TRD	3.4.4	137	Manpower and Personnel - Are the Operator/maintainers skill levels identified expected to perform these activities on all of the comm. systems as well?	Roles, responsibilities, and activities are expected to be identified during the design process through interactions between the User, Contractor, and ILS working group and will include information gained through site surveys.
TRD	3.4.4.c 3.5.2.4(a)	348	3.4.4(c) requires system to be maintained by one skill level 5 tech but 3.5.2.4(a) seems to allow more than one tech for some maintenance. Which is correct?	See updated TRD.
TRD	3.4.5.1.c	138	What is the "SCORM standard"? Are there any reference documents?	See updated TRD.
TRD	3.4.8.2	176	The TRD indicates that the transit case based equipment function both in and out of the transit case without altering the system configuration. (Para 3.3.1.a) This implies that either the EMP, lightning, NBC survivability requirements do not apply during out-of-case operations, or optionally that individual LRUs has to be hardened. Which option is correct? There is also an implication here regarding COTS. Is tailoring permissible for COTS equipment?	Having hardened LRUs is one approach, as noted. GEMS design, however, is a contractor design prerogative.
TRD	3.5.1.3(a) 3.5.1.4.c	347	3.5.1.3(a) requires minimization of single point failures but 3.5.1.4(c) would like redundancy kept to a minimum. These seem to be conflicting requirements. Please clarify.	These threshold and objective requirements are not in conflict; they are intended to support overall Ao and Transportability requirements.
TRD	3.6.1.b & c	140	Are COE requirements levied on existing and re-used applications?	See updated TRD.
TRD	3.6.3	349	Please clarify what software must be delivered in the applicable SOW tasking and CDRL requirements. Please clarify the applicable Government software standards that apply in this section.	Data Item Descriptions (DIDs) for each CDRL will define delivery requirements.
TRD	3.6.3.b	141	Please provide the "applicable Government software standards" referenced in this paragraph?	Data Item Descriptions (DIDs) for each CDRL will define delivery requirements.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	Appendix A	350	See submitted Appendix A for consideration.	See Updated TRD.
TRD	CER Confidence Level	143	Who provides the PANG II?	PANG II, or similar may be a GFE item, unless the contractor proposes something else.
TRD	Figure 1.2	190	Lack of an OPSCON overview leads to industry supposition and in turn becomes a potential source of confusion. Areas include: (1) The rationale for equipment deployment models and remoting to augment understanding of user pressure points. (2) The operational interaction between GEMS and downstream circuit customers. (3) The role of GEMS mission management versus system mission management functions "(e.g. MPSS, VLF/UHF/HF, and network planning). (4) The focus on transit cases when other packaging concepts have sufficient merit to warrant consideration.	OPSCON contained in ORD version 84.
TRD	Figure 3.1	34	Will the "comm. Terminal" area be secure?	Physical security will always be present. Information security is different. Appropriately cleared personnel are available on a shift but may be not be present on a console unless classified information is being processed. The design must control access to information such that information is not made available to personnel without appropriate clearances.
TRD	Figure 3.1	36	Will the HF transmitter/coupler/TR switch and probably front-end-preselection/downconverter have to be located with the antenna and not with the comm. terminals as shown?	This is a design prerogative. Also, see above response regarding "secure" areas.
TRD	Figure 3.1	35	Is there an expected minimum real-estate area occupied by antenna location?	The area required will be part of the system design and accepted/rejected as such.
TRD	General	207	The Phase I effort is a "Concept and Technology Demonstration." The deliverables are: 1) Risk Mitigation Plan and 2) System Design. Might there be other deliverables as well? Such as 3) Plans for Completion of Phase II, and 4) a hardware/software demonstration, if available. Also, please clarify whether the CDPS is required as part of the Phase 1 study contract or a suggested contractor option in addition, to the Phase 1 study contract.	Phase I is intended to be a description of how the offeror intends to accomplish Phase II and answer the desired output questions discussed during the 1/5/04 Meeting with Industry (posted to HERBB).
TRD	General	175	Nine klaxons, with supporting power supplies and transceivers will consume considerable pallet space. What drives this requirement and could the number be reduced?	The number of klaxon/lights is as specified.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	General	233	Recommend all shalls be preceded by a Requirement ID tag , e.g. G0010, G0020 in increments of 10 for ease in tracking requirements. Many requirements need to be rewritten to yield verifiable requirements. See Par. 3.1(d) as an example. Many requirements as written tend to dictate the implementation. This limits the flexibility of potential designs. Is this the intent? Recommend removing reference to revisions of documents in the body of the document because the date and revision of all references is captured in section 2.	Editorial comments noted.
TRD	General	216	Does the Government inventory include a VLF receiver that meets 3.2.1.2.1 and will it be on the GFE list?	No VLF/LF receiver will be supplied to the Contractor.
TRD	General	215	What GFE will be made available at fixed sites? Specifically, power, storage area, installation footprints, Base Civil Engineering support, etc.	These questions will be answered as part of the Industry output from Phase I.
TRD	General	214	What are the GFE equipment that will need to be integrated into GEMS, including legacy radios? If GFE legacy equipment are to be provided, how will deficiencies in that equipment be handled?	Any GFE to be integrated into GEMS has not yet been identified. Assuming "deficiencies in that equipment" implies that equipment capabilities are other than required for GEMS, correction of those deficiencies is part of the design.
TRD	General	213	Will any equipment be made available during the Phase I effort to support contractor demonstrations?	No.
TRD	General	212	Is there guidance available on the priorities of fielding GEMS? Will the Government complete installations, or will there be a worldwide collaborative team?	The number and type of sites that are required for IOC is in negotiation. As a minimum, there will be at least one fixed and one transit case GEMS site. GEMS includes installation and removal at fixed sites by the Contractor.
TRD	General	211	Phase 1 effort is to be a study for the development of a GEMS Architecture. Please clarify if the Phase 1 Proposal is to be for the study only or is it to include price, schedule and technical description for the Bidder's projected architecture.	Phase I is intended to be a description of how the offeror intends to accomplish Phase II and answer the desired output questions discussed during the 1/5/04 Meeting with Industry (posted to HERBB).
TRD	General	210	Will there be specified formats for the Resumes and Relevant Experience examples? If "yes" can you provide them to industry as quickly as possible?	Resumes are not required and the reference to them has been removed.
TRD	General	201	Will the Past Performance Volume be due with the remainder of the proposal, or will it be due earlier?	See Section L.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	General	208	Do you anticipate a Pre-Solicitation Conference once the Phase I draft Sections B, H, I, and L are released (i.e., the complete DRFP)? If not, will you have a Pre-Proposal Conference after the formal RFP is released? If the latter, will you give offerors 45-60 days to respond? How will you handle Pre-Solicitation/Proposal Conferences for the Phase II proposals? Will you have a DRFP for Phase II? If yes, when do you anticipate it will be released?	The Pre-Solicitation Conference was the 1/5/04 Meeting with Industry (posted to HERBB). There will be a Pre-Solicitation Conference prior to Phase II. It will take place near the end of Phase I.
TRD	General	196	Is the intent of the Program Office to restrict the Phase II candidates to the three winners of Phase I or is Phase II completely open to any and all contractors? If Phase II is to be another open procurement, how will ESC ensure that proprietary information generated in Phase I is protected?	GEMS Phase II will be a Full and Open Competition. The Government intends to follow the procedures designed to protect proprietary information.
TRD	General	204	Will the Phase I RFP include a Small Business Participation Plan in addition to a Small Business Subcontracting Plan? Will the subcontracting goals be based on the latest DFARS guidance? Do you anticipate the subcontracting goal will be a Factor/Sub factor in the Phase I RFP as it is only a study?	Yes. Yes. As stated in Section M.
TRD	General	203	What North American Industry Classification System (NAISC) code will govern the GEMS acquisition?	See HERBB.
TRD	General	202	When will SCA compliance become mandatory and will additional funding be made available to support such?	Requirements, as written, reflect that compliance is mandatory.
TRD	General	194	A survey of a candidate fixed site is being planned; any plans under that effort to survey, or perhaps interview, mobile teams deployed without mobile shelters?	A contractor conducted site survey is part of Phase I. The Government will provide Phase I participants with as much information as possible.
TRD	General	195	With regard to equipment removal, will industry have any responsibilities for the final disposition of such equipment or will the Air Force deal with hardware removal and disposition?	IAW Gov Property clause.
TRD	General	197	\$2 M is listed as potential award value for Phase I. Are all the funds intended for the contractor or does the \$2 M include the ESC program management?	All funds posted are contractor funds.
TRD	General	209	How many volumes will be included in the written proposal and could the volumes be identified by title and maximum page count?	See Sect L.
TRD	General	150	Please expand the operational time period definition to support Ao calculations.	See CJCSI 6811.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	General	22	Per the referenced Memorandum and TRD paragraphs, does the Government intend that JTRS JPO be responsible for the acquisition of the radio hardware and software waveforms for GEMS or is a waiver in process? If there is a waiver, please provide the description/details of the waiver request.	No.
TRD	General	24	There are many requirements that cannot be assessed until the TBDs / TBSs are provided.	See Updated TRD.
TRD	General	25	When will the Governments Library be established and accessible by the Contractors?	Library is open.
TRD	General	177	The statement "Any fielded GEMS configuration shall be interoperable with all other fielded GEMS configurations to the extent supported by the equipment set deployed." This implies a very large matrix of configurations. Is there a more specific set of interoperable circuits definitions available? As stated, this requirement does not appear to be testable.	GEMS can be fielded in configurations to support differing mission requirements. Assuming the objective HF requirement is not incorporated, the only BLOS GEMS transmission capability is EHF.
TRD	General	26	Not all documents in this section reflect the latest version available or are not identified (e.g. 3 Sept 91 OSD Strategic C3 review). Also, in some instances the cited version is not available on-line but the newer version is (e.g. DoD JTA 12 Sept 03)	See Updated TRD.
TRD	General	174	Deployment of up to nine klaxons to a potential maximum distance of ten miles is an extremely time consuming and labor intensive process. What drives these requirements? Driving times alone will exceed the required set-up times.	Setup times are as required.
TRD	General	27	Three documents have been flagged as being superseded and the replacement is listed, will the table and the associated requirements within the TRD be updated to reflect the correct documents?	See Updated TRD.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	General	144	The Government asked for potential offerors to comment on the Governments intent to request Government Purpose Rights (GPR) for all software, hardware and documentation to be provided under GEMS. For software, hardware and documentation developed exclusively for the Government under GEMS there would not be any problem providing GPR. For Commercial Off The Shelf (COTS) items included as part of the GEMS solution the provision of GPR is more problematic. General commercial practice is to provide the Government with the same license offered to other commercial companies. These licenses are generally more restrictive than GPR. It may be possible to negotiate GPR for COTS products included in GEMS but we expect there would be a cost to obtain these rights. Other mixed funding items included in GEMS may be able to be procured with GPR for a price. At this stage in the procurement process it is not possible to tell the Government that GPR can be obtained for all parts nor what the cost impact of obtaining these rights would be.	Government Purpose Rights (GPR) will be addressed in the SOO for Phase I.
TRD	General	147	How will GFE (JTRS Radio for example) fit into the GEMS transit case requirements?	Contractors are encouraged to propose the most cost effective GEMS program. No documents specify that the "JTRS Radio" is GFE.
TRD	General	28	EAP CJCS, Volume VII is stated as "Current Edition", this should be specific for a version and date.	Need to check for latest from ACC.
TRD	General	23	For all of the equipment separation distances identified in the TRD (e.g. 500' Threshold, 1000' Objective), are these distances point-to-point (as the crow flies) or are they cable length distances?	Distances are cable lengths, See Updated TRD.
TRD	General	149	What are the explicit specifications covering interoperability?	See Updated TRD.
TRD	General	151	Please confirm no interoperability with FEPs and AWS as listed in ORD.	See updated TRD.
TRD	General	152	If MDR applies to GEMS, please clarify concept of operations for MDR	MDR is required, See Updated TRD, EHF Section.
TRD	General	153	What is the CONOPS for Secure Data?	See ORD Version 8.4.
TRD	General	154	Please clarify the CPT interface to GEMS (displays, COMSEC control, etc.)	CPT interoperability is the requirement, interoperability is defined in EHF ICDs called out in the TRD.
TRD	General	155	If a detailed Operational Concept has not yet crystallized solidly, can a generic concept be presented?	See ORD 8.4.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	General	29	NSA DS-101 has document number identified in the title column	See Updated TRD.
TRD	General	30	ANSI T1.601-1999, no title is provided	See Updated TRD.
TRD	General	172	Is it correct to assume that the EHF Communications Planning data coming from the MPSS is black?	"MPSS" is not a recognized term.
TRD	General	173	Does system setup time (mobile sites) include the klaxon and klaxon warning light deployment times?	Setup time has to include installation of klaxons to provide an operational system. For planning purposes, the "two klaxons" referenced in the TRD can be regarded as collocated with other GEMS equipment. See updated TRD.
TRD	General	148	Please clarify interoperability for FOTs, AEHF NMT, SCAMP SEP, CPTR?	See Updated TRD.
TRD	Remoting Requirements	48	Due to these specified remoting requirements the operator interface/display equipment could be 500/1500 feet away from the CDPS (3.2.1.5.5.f) that is 500/1500 feet away from the radios (3.2.1.5.5.b, c, d, and e) that are 500/1000 feet away from the antennas (3.2.1.2.n). These requirements have a significant impact on GEMS system design, power distribution, setup/teardown time, heating/cooling air distribution, and pallet space consumption. What is the driver for remoting the operator interface/display equipment 500/1500 feet away from the CDPS? What is the driver for remoting the CDPS 500/1500 feet away from the radios? Can it be assumed that the radio equipment (VLF/LF, UHF, AEHF) will always be collocated (i.e. would the EHF radio be 500/1500 feet from the CDPS in one direction and the VLF/LF radio set be 500/1500 feet in the other direction)?	The requirements are based on User needs based, in part, on the need to site operator(s) in more benign environments than antennas. The requirements are also based, in part, on providing flexibility in locating terminal, processing, display, and other equipment. With regard to collocation (or lack of it) of individual radio equipment, the design is open so long as GEMS requirements are met.
TRD	Support Equipment (SE)	139	Will GEMS have access to Navy inventory as well since this is a joint maintenance program?	The contractor should give first consideration to existing items already in the Government inventory, not limited to AF.
TRD	Table 3.2.1-1	327	IAW SI-1135, SI-2035, PMW-145, SI-3135 and TBD	See updated TRD.
TRD	Table 3.2.1-1	325	IAW SI-1135, SI-2035, PMW-146, SI-3135 and TBD.	See updated TRD.
TRD	Table 3.2.1-1	324	User Network Operations Access Request	See updated TRD.
TRD	Table 3.2.1-1	326	Satellite Acquisition and Tracking Requests.	See updated TRD.

<i>Document</i>	<i>Reference</i>	<i>Gov't ID Num</i>	<i>Question</i>	<i>Govt Answer</i>
TRD	Table 3.2.1-1 and 3.2.1.-2	170	Please clarify CONOPS for use of EHF Telemetry, Tracking & Satellite Acquisition Requests and Responses.	See Updated TRD.
TRD	Table 3.2.2-1	117	First row on both page 59 and 60 are a repeat of page 58	See updated TRD.
			On page 60, change "The Total Transportable with EHF, Aircrew Alerting, VLF/LF, AEHF Upgrade and VLF/LF Upgrade = 46" to "" 48"	
TRD	Table 3.2.2-2	126	In general, the specific test methods, test procedures, durations, applicable figures/curves/spectra, number of cycles, cycle selection, etc are not identified nor are they identified in Section 4.2.2. When will this next level of detail be provided? Table 3.2.2-2 should be updated to include the Nuclear (HEMP and Radiation) requirements.	See updated TRD.
TRD	Table 3.2.2-2	333	Format fix: header erroneously includes row a	See updated TRD.
TRD	Table 3.2.2-2	334	Clarify which equipment is applicable for Indoor, Outdoor etc.	See updated TRD.
TRD	Table 3.2.2-2	225	Current: Row a, Temperature and Temperature Shock is repeated on every page Recommended: Requirements are fine, minor formatting error	See updated TRD.
TRD	Table 3.2.2-2 f	335	Define class/criteria for fungal growth	See updated TRD.
TRD	Table 3.2.2-2 n	336	Define vibration test criteria levels and duration.	See updated TRD.
TRD	Table 3.2.2-2.h	165	Please clarify why snow is not applicable for outdoor environment yet operation to -54 oC is specified.	See updated TRD.
TRD	Table 4.1	142	This table is not yet complete, when will this information be provided?	The table will be further addressed during the study phase.